Author’s response to reviews

Title: Hip fracture in hospitalized medical patients

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Version: 6 Date: 27 July 2012

Author’s response to reviews: see over
Reviewer's report
Title: Hip fracture in Acutely ill hospitalized medical patients
Version: 5 Date: 2 July 2012
Reviewer: Keita Miyanishi

Reviewer's report:
The authors analyzed more than 2 million cases to examine risk factors related to in-hospital hip fracture. They performed univariate and multivariate analyses giving increasing age, female gender, nursing home transfer, dementia, malnutrition, delirium, and anemia being risk factors related to in-hospital fracture.
They used a valuable patient registry (CMBD which covers more than 90% of the country population) which allowed the authors to examine a huge number of patients. The paper is well written and sounds logical. I have only minor comments.

(1) In this study, did you have clear definitions for the diagnoses of dementia, delirium, malnutrition, and anemia? Were these diagnosed based on the same definition in each patient? I assume that these diagnoses were made based on each physicians’ judgement and therefore the definitions differed. Please make this clear in the text.

Yes, all these diagnoses are based on the same definition for all de patients and they are based on ICD-9-CM code contained in the clinical discharge data.

(2) In the result section, the authors stated that the median age of in-hospital hip fracture patients was 81.69 years whereas it was 81.52 in the Table 1. Please check this discrepancy.

The discrepancy has been checked and corrected

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.
Reviewer's report
Title: Hip fracture in Acutely ill hospitalized medical patients
Version: 5 Date: 4 July 2012
Reviewer: Masayuki Iki
Reviewer's report:
To know the incidence of hip fracture during the admission to internal medicine hospitals in Spain, the authors analyzed the clinical data of 198974 adults extracted from an administrative database covering 90% of the population, and found that the incidence rates of in-hospital of hip fracture was 0.057%, patients with in-hospital hip fracture resulted in longer hospital stay, higher medical cost and higher mortality. The authors reported several risk factors of in-hospital hip fracture from co-morbidities. This paper gives important information to improve patient safety in hospital from population-based data, but contains several problems which should be addressed and errors which should be corrected.

Major Compulsory Revisions
Methods
1. P5 1st paragraph: The inclusion criteria should be clearly defined in terms of age at admission or discharge, diseases which ensure “acutely ill” status stated in the title, and so on.

We analyze patients who develop as a complication of admittance hip fracture in Spanish internal medicine services. Methods: we include exclusion and inclusion criteria. The title has been corrected following your instructions.

2. P5 2nd paragraph: The authors should state how to specify the time when each hip fracture occurred. Otherwise, they cannot decide the index hip fracture occurred during the admission or before the admission.

The main outcome was a diagnosis of hip fracture during admission. Patients with a hip fracture at admission were excluded

Results
3. Emergency admission accounted for more than 90% of admissions analyzed in this paper which is very high. The data analyzed in this study may not be representative of the total admissions in internal medicine wards even though the authors stated that the database covered 90% of population. The authors should give distinct explanation for it.


We did not include this reference nor the data contained in it (the high percentage of emergency admissions for Internal Medicine patients in Spain vs the low percentage of elective admissions) so as not to confuse the readers with more information.
Discussion
4. The authors used any hip fracture listed in secondary diagnosis field as hip fracture which occurred during the admission. Such hip fractures may have been contaminated with those which had already existed at the admission. The authors should discuss this, and add this problem in limitations if they fail to solve it.

We think it is already explained in methods. All patients with a prior fracture on admission were excluded from the study and therefore are not listed.

5. It may not be clear whether risk factors analyzed in this paper preceded the occurrence of hip fracture or not. Temporal relationship of the association should be discussed. The authors should add this problem in limitations if necessary.

It is already listed in the text, first line of the limitations of the study:

The limitations of our study are related to the use of an administrative database as the source of data and some risk factors of hip fracture can be not well documented. In other cases of hip fracture information may not have been entered in an effort to protect the reputation of physicians or the hospital center, or simply because the description of the complication is not very specific and cannot be properly interpreted. Nevertheless, given the clinical importance of hip fracture, it is unlikely that it will be omitted from the hospital discharge report. Another noteworthy limitation is that the administrative database used did not include the treatments received by patients during admission.

6. The authors should discuss how the results from the present study can be used to prevent patients from hip fracture or promote patient safety.

Included in discussion in an abbreviated manner.

Minor Essential Revisions

Abstract
7. P2 L3: “Our country” should be “Spain”.
8. P2 L9: The mortality rate of patients without hip fracture should be added for comparison.

OK corrected

9. P2 L9: “Much” should be reworded to “significantly”.

OK corrected

10. P2 L10: "Episode" may be misleading since it may mean admission or hip fracture. It should be reworded to specify the meanings throughout the manuscript, and should be the former here.

OK corrected

11. P2 L12: “OR 2.32” needs to have a unit like “for 10 years”.

OK corrected

12. P2 L13: “Nursing home transfer” should be reworded since it is unclear whether it means transfer to a nursing home or admission from a nursing home.

OK

13. P2 L17: No data was given for increased morbidity in the abstract and main text. “Morbidity” may be deleted or relevant data should be given.

OK deleted

14. P2 L18: “Mean” stay and cost were referred as medians in the result section, and should be corrected.

The mean length of stay and mean cost are included in results and tables.

Introduction
15. P3 3rd paragraph: Description on falls should be shortened since this manuscript did not deal with falls.

OK shortened

16. P3 3rd paragraph: OECD HCQI should be described in a full term.

OK described in full term

17. P4 L3: SEMI should be spelled in a full term.

OK spelled
Methods
18. P5 1st paragraph: It should be defined how to calculate medical cost of each patient.

The cost in our country is defined by the Spanish Ministry of Health based on DRGs. Reference added.

19. P5 L4: The abbreviation, CMBD should be in parentheses and its full term should be outside.

OK corrected

20. P5 L17: “Use the data” should be reworded as “using the data”.

OK reworded

21. P5 2nd paragraph: The indicator defined here is different from that used in Table 2.

OK corrected

22. P5 2nd paragraph: The objectives of the exclusion criteria should be stated at first, and then details of the criteria should be described.

OK stated first

23. P5 2nd paragraph: The exclusion criteria included stroke, delirium and metastatic cancer which are included in risk factors analyzed in this study. Items excluded from the analysis cannot be analyzed. The authors should solve this discrepancy.

As explained in methods, these diagnoses have been excluded as principal diagnosis, but remain as secondary diagnosis and are therefore used for analysis such as risk factor. Corrected in the text

24. P6 2nd paragraph: “ICM-9-MC” should be “ICM-9-CM”.

OK corrected

25. P6 3rd paragraph: The t-test is not suitable to test the difference in medians.

The t-test has been used to test differences in means.

26. P6 3rd paragraph: The authors should specify a selection method of independent variables used in the logistic regression analysis. It seems strange to the reviewer that all the variables in Table 4 are highly significant (p<0.004 or less) even though the authors stated that variables with statistical significance (p<0.1) in the univariate analyses were introduced in the logistic regression analyses.
The significances has been revised and confirmed

Results
27. P7 L2: “Episode” is not clear for the reviewer. It should be replaced with admission or other more relevant word here and same throughout the manuscript and tables.

OK replaced

28. P7 1st paragraph: The authors should specify the number of patients or admissions identified in the database, the number of eligible patients according to the inclusion criteria, and the number of patients for analyses after the exclusion.

OK

29. P7 1st paragraph: SD is not suitable distribution index for median, instead the 1st and 3rd quartile values should be used.

The data is about the mean, not the median. The mistake has been corrected

30. P7 L7: The authors should specify whose cost 3789 Euro is. The authors should present the median cost for the patients without in-hospital hip fracture.

The cost in our country is defined by the Spanish Ministry of Health based on DRG.

31. P7 L16 The prevalence of co-morbidity in the patients with in-hospital hip fracture should be compared with that in the patients without in-hospital hip fracture, not with the total population value.

OK done

32. Effects of in-hospital hip fracture on mortality, length of hospital stay and medical cost should be adjusted for age, co-morbidities and potential confounders by logistic or linear regression models.

The effects of in-hospital mortality, length of stay and cost have been adjusted for age, gender, comorbidities and potential confounders (anemia, dementia, delirium) and the results has been included in the text.

Discussion
33. P10 2nd paragraph: Discussion on fall prevention is not appropriate for this paper since the authors did not analyze any data on fall.

OK suppressed

34. The authors did not analyze well-documented risk factors of hip fracture since the data were extracted from the administrative database. This should be added in limitations.
Conclusions
35. The authors stated “in-hospital hip fracture increased mortality and morbidity” but no data for increased morbidity was shown in the results.

Table 1 and 3
36. The title of the columns should be revised to, for example, “Patients with in-hospital hip fracture” and “Patients without in-hospital hip fracture”.

Table 2
38. “Nursing home transfer” should be reworded.

Table 4
39. Title should show the contents of table, for example, “Risk factors of in-hospital hip fracture in patients admitted to internal medicine wards in Spain between 2005 and 2008”.

Discretionary Revisions
42. P10 L10: The authors discussed that the first 2 weeks should be targeted for fall or hip fracture prevention. But this discussion is not relevant and may be deleted because mean hospital stay is about 10 days and most patients would be discharged in 2 weeks.
OK combined tables 1 and 3

44. The incidence rate of in-hospital hip fracture per 104 or 105 patient-days should be added in another column of Table 2.

The incidence rate has been included

Level of interest: An article of importance in its field
Quality of written English: Needs some language corrections before being published
Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:
I declare that I have no competing interests.