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.

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.

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.

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.

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.

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.

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.
9. P2 L9: “Much” should be reworded to “significantly”.
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.
11. P2 L12: “OR 2.32” needs to have a unit like “for 10 years”.
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.
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.
14. P2 L18: “Mean” stay and cost were referred as medians in the result section, and should be corrected.

Introduction
15. P3 3rd paragraph: Description on falls should be shortened since this manuscript did not deal with falls.
16. P3 3rd paragraph: OECD HCQI should be described in a full term.
17. P4 L3: SEMI should be spelled in a full term.

Methods
18. P5 1st paragraph: It should be defined how to calculate medical cost of each patient.
19. P5 L4: The abbreviation, CMBD should be in parentheses and its full term should be outside.
20. P5 L17: “Use the data” should be reworded as “using the data”.
21. P5 2nd paragraph: The indicator defined here is different from that used in Table 2.
22. P5 2nd paragraph: The objectives of the exclusion criteria should be stated at first, and then details of the criteria should be described.
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.
24. P6 2nd paragraph: “ICM-9-MC” should be “ICM-9-CM”.
25. P6 3rd paragraph: The t-test is not suitable to test the difference in medians.
16. 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.

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.

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.

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

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.

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.

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.

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.

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”.

37. Values in the tables should be clearly defined for example, Mean (SD), Median (first and third quartile values), or number (%), and so on.

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”.

40. Abbreviations should be explained in the footnote.

41. The unit of OR for age should be clearly defined, suggesting “/10-year increase”.

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.

43. Table 1 and 3 can be combined. Table 3 may be inserted just after gender in Table 1. And Charison index may be moved just after the cost.

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

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.