Reviewer's report

Title: Treatment Incidence of and Medical Utilization for Hospitalized Subjects with Pathologic Fractures in Taiwan - Survey of the 2008 National Health Insurance Data

Version: 1 Date: 1 February 2011

Reviewer: Jim whedon

Reviewer's report:

Major Compulsory Revisions

1. Abstract / Background
   The research question is undefined. What is the specific gap in knowledge that this study is intended to fill?

2. Introduction / Paragraph 1
   “…should be considered to be of greater importance…”
   Greater importance than what? What is the comparison, and what is the statistical basis for the comparison?

3. Introduction / Paragraph 2
   “to perform a nationwide epidemiological survey of pathologic fractures”
   is a vague aim. What is the specific aim of the project, and how will we benefit from knowing the results?

4. Materials And Methods
   There is no mention in the methods section of stratification of results by age category. On what basis were the age categories chosen?

5. Treatment incidence of pathologic fractures of various locations and associated metabolic disorders / Paragraph 1
   “Of the 3,094 studied subjects, 5,244 incident cases of various categories of pathologic fracture were identified”
   The number of incident cases exceeds the number of subjects. Does this mean some patients had multiple admissions for fracture, sustained more than one fracture per admission, or had one or more diagnoses applied to the same injury? How many patients, and what kinds of fractures? What are the characteristics of this apparently higher risk sub-group? The discrepancy between the number of cases and number of subjects should be explained.

6. Treatment incidence of pathologic fractures of various locations and associated metabolic disorders / Paragraph 2
I am struck by the finding that pathological fractures due to neoplasms occur at a rate 3 times higher than the rate for pathologic fractures due to category 2 metabolic disorders, which include osteoporosis. In the West, osteoporosis is quite common, as are osteoporotic fractures, and fractures associated with osteoporosis are more common than those due to cancer. Is the prevalence of osteoporosis so much lower in the Taiwan, or is this a coding issue, wherein fractures associated with falls are often coded as traumatic rather than pathologic, despite the presence of non-neoplastic pathology that greatly predisposed the patient to fracture? These questions should be addressed in the discussion.

7. Discussion / Paragraph 1
What is the “the projection methodology?” It should be described in the methods section.

8. Citation #11, a study of metastatic bone tumors, is the only study cited in the context of discussing the prevalence of pathologic fractures in Taiwan. Is no data available from anywhere in the world that would serve to compare the prevalence of pathologic fractures in Taiwan with prevalence elsewhere? What about: Becker DJ et al. The societal burden of osteoporosis. Curr Rheumatol Rep. 2010 Jun;12(3):186-91.: “Osteoporosis currently affects 10 million Americans and is responsible for more than 1.5 million fractures annually.”

9. Conclusion
The authors state, “higher medical utilization but less-aggressive surgical intervention for patients hospitalized with pathologic fractures in Taiwan in comparison with other countries were noted.”

However, this study cites only cost figures on humerus and hip/femur fractures from one US study as a comparison. Elsewhere it was stated that utilization could not be compared with other nations due to scarcity of data. It is not clear that the conclusions are supported by the data.

10. The principal limitations of this study should be acknowledged in a separate paragraph.

Minor Essential Revisions
11. Abstract / Conclusions
Higher than what? Less aggressive than what?

12. Introduction / Paragraph 2
“…weakened by another disease process…”
Use of the word “another” is confusing.

13. Introduction / Paragraph 2
Use of the phrase “to the best of our knowledge” suggests a lack of confidence in the thoroughness of the literature search
14. Materials And Methods/Source, Security, And Quality Control Of Data
This discussion is interesting but lengthy, and distracts from the main focus of the paper. A much more brief description of the data source, quality and IRB approval would be adequate.

15. Statistics
“t-test was used to evaluate the significance of differences.”
Differences in what?

16. Discussion / Paragraph 1
Please explain the relevance of the classification of bone metastases.

17. Why did males have higher costs? This should be addressed in the discussion.

18. Discussion / Paragraph 3
Do you have any specific suggestions for how coding can be improved?

19. Discussion / Paragraph 3
It would be helpful to clarify specifically why your cost data is not comparable to the US cost data that was cited.

Discretionary Revisions
None

Level of interest: An article of importance in its field

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

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.