Reviewer’s report

Title: Utilization of evidence-based treatment in elderly patients with chronic heart failure: Using Korean Health Insurance Claims Database

Version: 2 Date: 13 April 2012

Reviewer: Mario Luca Morieri

Reviewer’s report:

Dear Sir:

I have read with interest the paper by Ju-Young Kim and colleagues trying to make a critical review according to the questions raised by your journal. I think that the question posed by the Authors is quite well defined. However it’s not new because, as they pointed in the discussion, several authors have attempted to assess the reasons for the underutilization of evidence based (EB) treatment for Heart Failure. In the “background” they made some interesting hypothesis concerning the causes of treatment underutilization, like adverse effects or contraindications. However they are not able to explain these hypothesis due to study limitations. If data on dosage and contraindications or adverse effect were available this could add great value of this paper.

Anyway, the study would benefit from addressing the following concerns:

Major Compulsory Revisions:

In my opinion this issue listed below needs to be elucidate before the publication of the manuscript

Methods:

1. To this reviewer is not clear if the treatments are prescribed at the discharge from hospital or by general practitioner after the discharge from hospital.
2. About study population, the primary diagnosis of heart failure was referring to admission diagnosis to the hospital or discharge diagnosis from the hospital?

In my opinion if the Authors are evaluating treatment after the hospitalization then they should consider the discharge diagnosis.

3. About “covariates”, previous cardiovascular disease histories and other listed comorbidities have been adjusted in the logistic regression model? I think it should be elucidated.

Results:

4. Section “Utilization of evidence-based treatment in CHF elderly”:

a. The first sentence presents mistakes: I think that percentage of patients is 71.4% not 70.3%. Furthermore the Authors should elucidate that they are referring to patients receiving “at least one drug” of the disease modifying treatments.
b. Ju-Young et al. describe the characteristic of the studied population, when comparing characteristic of different group they must report the statistical significance of their statements \((p=\ldots)\) and how they assess it (it could be added in table 1).

For example this statement need to be confirmed by statistical analysis:

i. “The clinical characteristics of each treatment group were not different within the total study population.”

ii. “More patients in the A+B group had angina .... compared to those in the non-use group. However, dementia was more pronounced in the non-use group.”

iii. “Patients in the A+B group were more likely to receive .... than were patients in the non-use group”

5. Section “Predictive factors for the utilization of each evidence-based treatment”:

a. Throughout the test the Authors use the term “predictive factors”, however taking into account that this is a cross-sectional study and the type of statistical analysis this term could not be used. Something like “factor associated with..” should be more appropriate.

b. First sentence: “The predictive factors for the utilization of evidence-based treatment were dependent on heart failure severity...”. Where is reported HF severity? How was it classified and assessed? The Authors should include this information in the text, and report the mean of heart failure severity in the tables.

i. This is the same for the abstract, HF severity shouldn’t be listed in the factors associated with underutilization of EB treatment, unless the Authors reported date regarding it.

c. Table 2 is never reported in the text. It should be useful for the reader to find it reported and better explained.

i. In Tab.2 total % of disease modifying group could be wrong (the sum of different group is 71.4% not 70.6%, as previously stated in this report)

d. Third paragraph (A+B group), to which table are the Authors referring to? It should be clarified. If Authors are referring to table 2 I think it could be interesting to underline the 0.83 O.R. for presence of chronic lung disease.

Discussion:

6. Third paragraph, “…Therefore, it could be inferred that the non-use group was more likely to be institutionalized”.

In my opinion the non-use group, that is associated with residence in rural area, is more probable to been admitted to smaller hospital (not tertiary) and treated by less specialized healthcare providers, thus receiving less updated treatments. I don’t understand how the Authors can inferred that this group was more likely to be institutionalized.

7. Fourth paragraph, “Beta-blockers have been avoided due to a fear of aggravating chronic obstructive pulmonary disease and diabetic control.”
The Authors should modify this sentence. Indeed from this study there are not available data on aggravating of chronic obstructive lung disease or diabetic control. If these data are available, the Authors need to report them in the results. Otherwise they could only discuss the negative association between B-blockers use and presence of chronic lung disease and diabetes.

8. When comparing to prescription rate of Gislason et al paper, the Authors made some little mistakes (the reported data are different from the data reported in the original paper of Gislason et al).

Minor Essential Revisions:

Results:
9. Add Standard Deviation when talking about mean age (second paragraph)

10. Third paragraph of Background: the first two sentences need references.

Discussion:
11. Third paragraph, at the end of first sentences “… and a residence was a rural area”. To this reviewer this sentences is not clear.

12. Reading Methods “Data source ”it seems that the Authors use diagnosis that has been coded in accordance with ICD10, however in the discussions the Authors report that the diagnosis of HF in the Khira database is not validated but compared to ICD10. This could be reported in Methods.

13. Study limitation: it is possible that some of the under-utilization of b-blockers reflects the fact that the patients had recently been hospitalized. It was generally recommended to stabilize patients first, before initiating b-blockers.

Level of interest: An article whose findings are important to those with closely related research interests

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'