Reviewer’s report

Title: Gender and age disparity in the initiation of life-supporting treatments: a population-based cohort study

Version: 0  Date: 25 Apr 2017

Reviewer: Aslihan Akpinar

Reviewer's report:

It is interesting to see if there is a difference between age or sex of the patient and the use of life supporting treatments (LSTs) and discuss possible reasons in the socio-cultural context of Taiwan (I think especially for helping ethical decision making process for LSTs). However, I think that the paper should be strengthened by consideration of the following suggestions:

In introduction

You should explain why the extra-corporeal membrane oxygenation data was used.

(1st page, 2nd paragraph) you should give short information about Extracorporeal Life Support Registry Report including who prepared this report with which patients’ data? In addition this paragraph is very difficult to understand because of using too many numbers and the last sentence (in summary…) do not represent the paragraph. You should consider rewriting this paragraph.

(2nd page, 1st paragraph) Objectives in this paragraph only include showing statistical results however in summary your 3rd objective is different. Please review and rewrite your objectives with ethical relevance.

In findings

Is there a data about survival rates of patients receiving ECMO?

In discussion:

(8th page, Line 26) "Particularly, the trends of the male GIR, the female GIR and Adult AIR all had a joinpoint in 2006, implying a significant trend change of ECMO use following 2006". I
think this is very important finding you did not discuss; you should consider discussing the meaning of this trend change (you had already discussed before #6).

In general you should enriched your discussion section with the studies about at least

- status of and autonomy perception for women, infants, children and elders in Taiwan,

- attitudes and opinions for life sustaining treatments and decision making process of physicians, nurses, other health care professionals, patients, public… especially in the context of Confucianism that you mostly mentioned without citation. For example are paternalistic attitudes common for health care professionals, who decide to use of LSTs, always families?

- What about the legislations and national ethical guidelines or regulations about this issue?

Your conclusion looks does not directly related your findings and discussion, therefore I think you should review you objectives, to put your findings in a proper ethical perspective and socio-cultural context in Taiwan, and re-write a conclusion based on your findings and discussion.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review
Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal