**Reviewer’s report**

**Title:** Comprehensive Geriatric Assessment predicts mortality and adverse outcomes in hospitalized older adults.

**Version:** 1  **Date:** 30 September 2014

**Reviewer:** Nicolás Martínez-Velilla

**Reviewer’s report:**

Avelino-Silva and cols. make a prospective observational study including 746 patients aged 60 years and over admitted to a geriatric in-patient unit of a tertiary university hospital.

The primary outcome was in-hospital death and secondary outcomes were delirium, nosocomial infections, functional decline and length of stay. Multivariate binary logistic regression was performed to assess independent factors associated to these outcomes. They conclude that Comprehensive Geriatric Assessment identified patients at higher risk of in-hospital death and adverse outcomes, of which those with functional dependence, malnutrition and poor social support were foremost.

Despite the barely innovative approach, the results show that a model of active comprehensive geriatric assessment is feasible and achieve many prognostic and therapeutic objectives. It’s a prospective observational study with some limitations to translate their results to other backgrounds.

**Major issues**

**Methods**

There are several methodological aspects that should be improved before considered for publication. In populations with short-life expectancy, mortality is not the most important issue. It has been 5 years since their study started but the primary outcome was in-hospital mortality. Furthermore it could be interesting to assess long-term mortality. I think that the statistical analysis should be reviewed.

Perhaps the authors should have used an international accepted index like Barthel index in order to compare with other previous studies.

Have the authors evaluated the inter- and intra-observer variability of the comorbidity indices and other variables

**Results**

There should be a better presentation of the results in the tables with explanation of the tests used in each of them (univariate and multivariate)

It’s strange that there is no significant change of functional status during hospital stay, with a mean length of stay of 16.7 days: could the authors explain this issue

**Minor issues**
As the authors declare in the text there is no mention about frailty that could enrich the discussion and conclusions. However they can apply the concept of accumulated factors (like frailty index) to the number of impaired CGA components. Hospitals provide a fundamental location in which to study frailty, due to their crucial turning-point role in patient decline.

Abstract
Some data that appear in the abstract (logistic regression analysis i.e. are not expressed in the text (results).

The Cornell Scale that the authors use is the Brazilian version

Results
Mortality is the main end-point and perhaps more data can be added like mean days until death, etiology, table / figure. Perhaps they could have performed a Cox regression and adjusted for the main confounders?

There are sparse data about readmissions though it is supposed to be a secondary outcome

It’s very strange that pressure ulcers were in the final logistic regression analysis of in-hospital death but not dementia /cognitive impairment. It happens the same with the binomial dementia-delirium

Falls, urinary incontinence and depression have been assessed but I don’t see any results related with this points; specially depression that can interact with dementia and delirium

BISEP and CIRS are useful scales in geriatric hospitalized patients instead of the frequently used Charlson index; these results confirm previous studies.

Polypharmacy was defined as the regular use of 5 medications but in table 2 the mean number of medications is very low for this type of population

Discussion
There are more recent references that could be included in the study about CGA:
BMJ. 2009 Jan 22;338:b50. doi: 10.1136/bmj.b50. Effectiveness of acute geriatric units on functional decline, living at home, and case fatality among older patients admitted to hospital for acute medical disorders: meta-analysis.Baztán JJ1, Suárez-García FM, López-Arrieta J, Rodríguez-Mañas L, Rodríguez-Artalejo F.


The authors affirm that their model improves the quality of care; please discuss further this point. Do they think that the model improve the quality of life of the patients?

References
There are several mistakes in the references that should be assessed. Reference number 49 is not reflected in the text.

Level of interest: An article of limited interest

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'