Reviewer’s report

Title: Health of Spanish centenarians: a cross-sectional study based on electronic health records

Version: 0 Date: 29 Mar 2019

Reviewer: Matteo Cesari

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My major concern is related to the unfair comparisons conducted in the study. The three study groups are not only different for age (ie, 100 and older, 90-99, and 80-89 years), but also because one group (ie, centenarians) includes persons alive and not at the moment of the study. The methodological approach followed by Authors is implicitly improving the health status of centenarians. It is normal to me that a group including both living and dead persons is in a better shape of groups only composed by persons who subsequently died.

Another issue resides in the novelty of the findings. It is already well demonstrated that centenarians tend to be healthier than individuals experiencing shorter survival. Authors should better characterize their study under this viewpoint. In this context, the analytical approach seems quite basic and largely based on univariate comparisons. It might have been, for example, more interesting to identify factors capable of predicting survival in multivariate models (comprehensive of socio-demographic, clinical, biological, and socioeconomic characteristics). Given the large sample size of the cohort, this might be quite expected.

Following from the previous point, the present analytical approach does not adequately address the fact that centenarians might present less diseases and use a lower number of medications simply because excluded from diagnostic/therapeutic protocols/algorithms. In other words, they might appear healthier (less diseases, less drugs), but they are not (ie, the diagnosis and/or the treatment are simply not considered). To (at least, try to) overcome this weakness, Authors should conduct 1) adjusted models (in particular, considering socio-economic aspects and functional capacities as confounders), and 2) consider cumulative markers of health status (and not base their conclusions on monodimensional observations).

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

No

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

Quality of written English
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