Reviewer's report

Title: The association between circulating adiponectin levels, lung function and adiposity in subjects from the general population; data from the Akershus Sleep Apnea Project

Version: 1 Date: 08 Nov 2017

Reviewer: B Thyagarajan

Reviewer's report:

The authors present a cross-sectional study on adiponectin concentrations and lung function (FVC, FEV1) in a population of 529 healthy adults in a Norwegian population. This results of this study are consistent with the results of at least one previously published study and confirms that adiponectin is not associated with lung function in healthy adults after adjustment for measures of adiposity and inflammation. This study is well written and the results are presented appropriately. There are a few comments that can improve the main findings of this study.

1. The first sentence in the abstract "while the relationship between ADPN and lung function in subjects from the general population has not been established " is incorrect as the authors cite 2 studies that have evaluated this association in the general population. This should be modified.

2. Since the authors present the beta coefficients for a log transformed adiponectin variable, the magnitude of effect is difficult to estimate. It may be easier for the reviewer to see the effect of one standard deviation increase in adiponectin (similar to the 5 kg increase in weight).

3. I presume in table 3, the model presented includes adiponectin and one additional variable (e.g.) adiponectin+smoking, adiponectin+WHR etc. If this is the case, the data presented in table 3 is confusing. The text indicates that the association between lung function and adiponectin was not significant after adjustment for WHR alone but this is not clear from Table 3. It may be better to delete this table altogether and significantly change the format of this table to reflect what is being said in the text.

4. If WHR completely explains the FVC-adiponectin association why present a multivariate analysis with all variables? It may be better to present four models (adiponectin+WHR, adiponectin+adiposity measures (other than WHR), adiponectin+inflammation/metabolic syndrome and adiponectin+OSA) to show that WHR is the most relevant covariate in this dataset.
5. It is not clear why the authors refer to quartiles when data is presented in tertiles. It is obvious that median refers to the 2nd quartile and so reference to quartiles seems unnecessary. Is presenting the median levels appropriate? Since the authors present the log transformed adiponectin values, presenting the geometric mean may be more appropriate.

6. Lastly, the authors should present if there is any bias between the 529 people who participated in this study as compared to the larger cohort of ~16,000 people to evaluate if there is any bias in this sample. If there is some differences from the overall cohort, this should be included in the limitations of this study.

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.

Yes

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

Yes

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
Please indicate the quality of language in the manuscript:

Acceptable
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 organisation 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