Reviewer's report

Title: Association between Metabolic Syndrome and Knee Osteoarthritis: A Cross-sectional Study

Version: 0 Date: 24 Jul 2017

Reviewer: Karine Louati

Reviewer's report:

Dear Editor,

I congratulate the authors on this interesting work. It is a well written and clear article. The association of knee osteoarthritis and the MetS is a topical issue. Here the authors have wanted to confirm this association in the Chinese population. I have just only minor suggestions or remarks.

In the material and method section, the authors list the inclusion criteria (line 105 to 110) and after, line 110 to 119, they list the number of patients who meet these criteria one by one. It would be more consistent to be given directly the number of patients meeting the whole inclusion criteria.

The diagnosis of osteoarthritis is based on radiography, which is common in studies. However, it should be specified in the material and method section that pain has not been taken into account and it must be discussed in the "limits" paragraph.

I think it would be more understandable to put the both MetS definitions in the "Assessment of MetS". The authors can also add to the "strenghts" that they used several MetS definitions.

In the discussion, it would be preferable to position "limits" before "strenghts".

The authors have used good references with usual cohorts on the subject (KHANES, NEO, ROAD).

Is it possible to have data on the association of osteoarthritis and treatments taken for the different elements of the metabolic syndrome? (For example, does OA is less frequent if the
patients having treatments for hypertension, diabetes and dyslipidemia?) And data on traumatic or surgical factors as confounding factors?

In opening, it could be proposed to explore the association between hand osteoarthritis and MetS, because it is a non-bearing joint.

**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 recommend additional statistical review

**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 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