Reviewer’s report

Title: Levels of NPY in synovial fluid relate to pain in patients with knee osteoarthritis

Version: 4 Date: 17 March 2014

Reviewer: Guang-hua Lei

Reviewer’s report:

Major Compulsory Revisions

The authors of this study have performed a experiment evaluating the relationship between the concentration of NPY in synovial fluid of knee and the pain of KOA. The authors found that NPY in synovial fluid demonstrated a significant increase in KOA patients compared with Healthy participants. And levels of NPY renders a significant upward trend while KOA pain intensified. NPY of Middle and Advanced stage of KOA patients was significant higher than Early stage of KOA patients. NPY of Advanced stage of KOA patients has no significant difference and has a downward trend compare with Middle stage of KOA patients. The topic of the study is interesting.However, there are some problems with paper.

1. This needs improvement in English grammar and sentence use.
2. Results: NPY of Advanced stage of KOA patients has no significant difference. The sentence "has a downward trend compare with Middle stage of KOA patients" should be deleted.
3. Perhaps you could measure NPY expression in serum, urine, cartilage, synovium. If author has no original data, some discussion on this point may be added.
4. Needless duplication of the results in Tables and figures should be avoided (Table 3 and Figure 1, Table 4 and Figure 2).
5. Pearson’s correlation / Spearman’s correlation and linear regression should be applied to determine the correlation between the levels of NPY and pain scores of KOA, and between the levels of NPY and radiographic grade).
6. Please add figure to the correlation between synovial fluid NPY levels and pain scores of KOA.
7. Discussion: The first paragraph of discussion; reads more like the end of introduction. The first paragraph should be deleted.
8. Discussion: Potential source of synovial fluid NPY should be discussed.
9. Discussion: This statement needs some discussion e.g. what possible role NPY plays in the pathogenesis of OA and OA pain?

Level of interest: An article whose findings are important to those with closely
related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

no