Reviewer's report

Title: Changes in the expression of aromatase, estrogen receptor alpha and beta in mandibular condylar cartilage of rats induced by disordered occlusion

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Reviewer: Pertti Pirttiniemi

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Changes in the expression of aromatase, estrogen receptor # and # in mandibular condylar cartilage of rats induced by disordered occlusion.

This is a very interesting paper with a good design. It also handles an important issue, the loading resistance of TMJ. The manuscript has, however, some, mostly minor, points that have to be addressed.

1. The written English is not is all points clear. Background, p. 3. line 8: “estrogen..attracted”, better to say “has attracted”. P. 12 “estrogen played an important role…”, better as: “estrogen plays…”. P.4”, line 3 “TMJ is a load-bearing articulation with its load” better as “structure” or “unit”. Line 12, “The hypothesis of the present study was”, better as: “hypothesis is…”.

In the Results now much of the data is given as descriptive data, without statistics. P. 8, last line: “degenerative changes, characterized by interrupted continuity of hypertrophic layer, pyknotic, homogeneous and eosinophilic lesion with few nuclei, and areas filled with eosinophilic nuclei near subchondral bone (Fig 1b and 1c), were observed in 2 and 4 joints of 8 joints from the female 2-wk and 4-wk experimental subgroups, and in 0 and 2 joints of 8 joints from the male 2-wk and 4-wk experimental ones. However, thickening changes in condylar cartilage, especially in hypertrophic layer, were found in 1 and 3 joints of 2-wk and 4-wk male experimental subgroups”.

The number of the animals with distinct pathological changes should be tested statistically in each group and either there were statistically more clear pathological changes in the experimental groups or not, this should be described.

On page 13 it is stated “Although there were degenerative areas without immunoreactivity in these condyles with thickening changes, they were small and had only an insufficient influence on the expression of extracellular matrix in the whole condylar cartilage. This is not in accordance with the Abstract: “Degenerative changes, characterized by interrupted continuity of hypertrophic layer, pyknotic and eosinophilic lesion with few nuclei, areas filled with eosinophilic nuclei, were observed in more joints from female experimental groups than male ones.”
So if the statistical testing is done concerning the existence of clear pathological changes in each group, it would clarify the interpretation of the results. Otherwise the paper is concise and the tables and figures are clear and informative.

**Level of interest:** An article of importance in its field

**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'