Reviewer's report

Title: Expression profile analysis of mycotoxin-related genes in cartilage with endemic osteochondropathy Kashin-Beck Disease

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Reviewer: Yidong Bai

Reviewer's report:

This manuscript reports a microarray study comparing the mycotoxin-related gene expressing profiles of patients of Kashin-Beck diseases (KBD) and healthy controls. Mycotoxins are an important environmental cause of KBD, but the mechanism of KBD cartilage damages caused by mycotoxins is rather unclear. This study found that mycotoxin poisoning might result in the functional abnormality of collagen, apoptosis and growth & development related phenotypes in cartilage, which may contribute to the pathogenesis of KBD. The experimental design and statistical analysis appear appropriate.

Following are some concerns,

1) In the Materials and Methods, “the KBD cartilage samples were collected from the KBD patients undergoing knee replacement surgery”. Please provide more information on these patients.

2) It would be nice if the authors could provide a description about the quality of microarray data.

3) It would be nice if the authors could discuss the role of THBS1 gene in the development of osteoarthritis. More description on THBS1 is required.

4) In the Conclusion, the authors suggested that this study results can help to understand the mechanism of other osteoarthrosis. As the same group also showed that pathogenesis of KBD is quite different from other osteoarthrosis, some clarification is needed there.

5) In the Supplement, the figure description of gene ontology expression analysis results is difficult to understand. Please provide detailed description of the analysis results.

6) Some reference on KBD and environment would be helpful.

The above comments are based on the report provided by Dr. Jiangtao Liu.

Level of interest: An article of importance in its field

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:

None.