Reviewer’s report

Title: Long-term outcome following additional rhBMP-7 application in revision surgery of aseptic humeral, femoral, and tibial shaft nonunion

Version: 0 Date: 09 Apr 2017

Reviewer: Etienne Belzile

Reviewer’s report:

GENERAL COMMENTS

Dear Editor,

Authors of "Long-term outcome following additional rhBMP-7 application in revision surgery of aseptic humeral, femoral, and tibial shaft nonunion." aim to evaluate the impact of using rhBMP-7 in their treatment of aseptic long bone diaphyseal non-union.

The overall quality of the manuscript and information transpired is adequate for publication in BMSD. The style of the manuscript is elaborate and complete. The data presented are important but the main weakness of this work is the ill-defined indications for applying the rhBMP-7 rendering conclusions weak as unlikely to be reproduced.

SPECIFIC COMMENTS:

Abstract

Well written abstract with clearly stated aims. The quality of the English translation remains of moderate quality. I would refer authors to professional English writers to improve their manuscript.

Introduction

Excellent introduction of key concepts in the early paragraphs, but the overall introduction is long. The paragraph starting with "The consensus …" P3 line 24-44 derails the reader from the principal topic of this paper and is not necessary.

Methods

This retrospective study presents data on an interesting number of aseptic long bone diaphyseal non-union treated by one institution.
Authors need to better expose why certain cases got rhBMP-7 and others did not. Was it not available for all cases? (circumstantial) Were certain surgeons not believing that such supplementation may not be indicated? (expert based decision making)

If the decision was taking intra-operatively, what was is based upon? Any patient, fracture, wound criteria?

Would there be other variables taken from surgery (refresh osteotomy angulation, amount of bone removed, size of last reamer, etc) possibly affecting results?

In the surgical procedure description;

Could authors simply present their technique and refrain from doing a discussion on the subject? It is still not clear in the text whether you've plated the humeri.

For sake of consistency, could authors present their data on extracted humeral nail diameter, and extracted and exchange tibial nail diameters.

P6 line 46-50

Please correct the style of references according to BMC's guidelines.

Results

Results are complete and presented in an organized manner in sync with their research questions. P7 line 12-14

The explanation of the non-union treatment concepts belongs to the methodology section, please correct.

P7 line 45

Please correct the style of references according to BMC's guidelines.

DISCUSSION

Overall the discussion flows with difficulty.

The summary of their aims and findings is not restated in the first paragraph.

That first paragraph is too long.

P10 line 34 until P11 line6
This section should be made as a stand-alone paragraph.

The conclusion is adequate.

REFERENCES

Proper and complete.

**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.

Not relevant to this manuscript

**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:

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