Author's response to reviews

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

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Author’s response to reviews:

Dear Editor,

Please find attached our revised manuscript entitled "Long-term outcome following additional rhBMP-7 application in revision surgery of aseptic humeral, femoral, and tibial shaft nonunion" (manuscript number BMSD-D-17-00299). We would like to submit this revised manuscript for consideration in BMC Musculoskeletal Disorders. We declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere.

We would like to thank the Editor and the reviewers for the valuable comments increasing the quality of the manuscript.

All concerns which have been raised by the reviewers have been addressed in the revised manuscript. All revisions have been highlighted in green. In the following pages, you will find a detailed listing of all point-by-point answers to reviewers’ concerns.

We hope the submission of our revised manuscript is suitable for publication.

Yours sincerely,

The authors
Dear Reviewers,

The authors very much appreciate your thorough review and positive assessment of this research work.

SPECIFIC COMMENTS:

Reviewer #1

1. a) Abstract

Well written abstract with clearly stated aims.

Authors’ Response:

Thank you for this valuable comment. As you suggested, a native English speaking colleague critically reviewed and copyedited the entire paper.

1. b) The quality of the English translation remains of moderate quality. I would refer authors to professional English writers to improve their manuscript.

Authors’ Response:

Thank you for this valuable comment. As you suggested, a native English speaking person critically reviewed and copyedited the entire paper.

2. 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.

Authors’ Response:

We absolutely agree with you. As you suggested, we shortened the Introduction section, and deleted this passage.

3. 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?

Dear reviewer, in terms of your very important concerns, we added information about decision making in the discussion section as follows: “The decision to use additional rhBMP-7 was solely based on the intraoperative discretion of the treating surgeon. RhBMP-7 was available in all cases and the use was not dependent on the belief of the treating surgeon. Also other variables taken from surgery such as patient, fracture, and wound-related criteria did not influence the decision to use rhBMP-7.”

4. 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.

Dear reviewer, according to your concern, we amended the surgical procedure description in the results section.

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

Dear reviewer, thank you for this remark. We added this important information in the respective sections.

- The median diameter of the extracted humeral nails was 8 mm (range 7-9 mm).
- The median nail diameter of the extracted nails was 10 mm (range 9-13 mm) and the median diameter of the inserted exchange nails was 12 mm (range 10-16 mm).

5. P6 line 46-50: Please, correct the style of references according to BMC's guidelines.

Thank you very much for this valuable annotation. We have corrected the style of references according to BMC's guidelines.

6. 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.

Thank you for this important comment, we have added the explanation of the non-union treatment concepts to the methods section.

7. P7 line 45: Please correct the style of references according to BMC's guidelines.

We have corrected the style of references according to BMC's guidelines.

8. 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.

We absolutely agree with you. As you suggested, we substantially shortened and condensed the Discussion section, and deleted redundant content as well as passages that were not essential for interpretation of the results.

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

Thank you for this remark. We agree and amended this section into a stand-alone paragraph.

Comments Reviewer #2:

Authors’ Response:

The authors very much appreciate your estimation of recency and clinical relevance of this research work.