Author’s response to reviews

Title: Risk Factors for Revision of Primary Total Hip Arthroplasty: A Systematic Review

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Author’s response to reviews: see over
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Abigail Quiniquini
Timothy Shipley, PhD
BMC – MSK

RE: MS: 6706794297208706
Risk Factors for Revision of Primary Total Hip Arthroplasty: A Systematic Review
Julian JZ Prokopetz, Elena Losina, Robin L Bliss, R. John Wright, John A. Baron and Jeffrey N Katz

Dear Ms. Quiniquini and Dr. Shipley:

We thank the reviewers for their careful edits and helpful suggestions on our manuscript, “Risk Factors for Revision of Primary Total Hip Arthroplasty: A Systematic Review.” We believe their recommendations have improved the clarity and scientific value of the paper. We have addressed the comments point-by-point below, and bolded relevant changes in the manuscript.

We look forward to hearing from you.

Sincerely,

Jeffrey N. Katz, MD, MSc
Reviewer 2 had no comments. We respond to those of Reviewer 1:

1. I am not clear on the last line of the introduction, how can we promote preventative measures? Do you mean for the patient or surgeon? I don’t see any modifiable risk factors identified on the patient side?

We appreciate the reviewer’s close reading. Many factors we discuss are non-modifiable (exceptions include implant- and provider-related factors), so we have amended the sentence to read as follows (page 4):

This systematic review may help surgeons more accurately assess the factors associated with failure of THA, and may promote fully informed conversations of the risk and benefits of the procedure between surgeons and patients considering THA.

2. Was the search performed in duplicate? I believe that helps limit missed papers.

We did not have a second reviewer duplicate the full screening of 2,122 titles, but we did perform several screening validations, as outlined in the Methods section. Given the high accuracy of the screening (senior author’s assessment agreed with primary reviewer’s in all cases but one), we did not feel it necessary to proceed with a full duplication. We paste below the section of Methods where we discuss validation (page 6-7).

**Validation**

A second reviewer independently screened random samples of 200 titles, 100 abstracts, and 40 papers. Any disagreements in the decision of whether to exclude the titles, abstracts, or papers were adjudicated by the senior author (JNK). With the exception of one abstract, the senior author’s assessment of exclusions on all screened items agreed with that of the primary reviewer (JJZP) (the abstract was found to be ineligible at the paper level).

We performed a second validation analysis on the overall screening process, determining agreement on a single set of 200 papers that passed through all three levels of screening (title, abstract, paper). Again, disagreements were adjudicated by the senior author, and here too, the senior author’s assessment concurred with that of the primary reviewer. Finally, the senior author abstracted key data elements on eight eligible papers, blinded to the primary reviewer’s abstraction, and agreed with the primary reviewer’s assessment on all elements in all eight papers.

3. In the results, the authors mention a paper was excluded bc of, ‘revision for any reason other than infection”. I would like to understand further why it was removed? Would this not fit with the authors outcome of interest?

We excluded this paper because it conflates two distinct endpoints of interest (aseptic loosening and dislocation), as well as other potential endpoints not discussed in this paper, such as
fracture. There is thus no appropriate comparison to be drawn between this and any of the other manuscripts, so any risk factors analyzed in this piece would fall short of the three-paper minimum for inclusion in the discussion. We have attempted to clarify this point in our manuscript (page 8):

In addition, three papers examined unique endpoints: revision for acetabular osteolysis, revision within 90 days of primary THA, and revision for any reason other than infection (which conflates aseptic loosening, dislocation, and endpoints not examined in this paper such as fracture).

4. Pls make clear the RA vs AVN comparison. Is this RA (no AVN) vs OA w AVN? Of course, RA could have AVN also so it is unclear.

In each of the four articles that made this comparison, the groups were RA vs. AVN. It is conceivable that some of the cases categorized by these authors as AVN had concomitant secondary OA but the papers did not provide this level of detail. We add a clarification (page 10):

The papers comparing RA with AVN did not indicate whether the cases of AVN might have been accompanied by secondary OA.

5. I would suggest removing the DDH vs OA comparison as it this comparison has many potential confounding factors. Is this high riding DDH vs a low subluxation/dislocation? Are these THR for DDH performed with a high hip centre or not? This would have the potential for implant longevity given the smaller cups used with a high hip centre.

We have removed the comparison of DDH vs. OA as suggested.