Author’s response to reviews

Title: Risk factors associated with osteonecrosis of femoral head after internal fixation of femoral neck fracture: A systematic review and meta-analysis

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Dear editor and Reviewers:

Thank you for your valuable suggestions, we have made relevant modifications according to the review opinions, see below for details, thank you!

Question 1: The proper search using mesh term could not be provided
Answer: In order to search more comprehensively, we use Medical Subject Headings (MeSH) and non-MeSH to search together. Take pubmed database as an example, search strategy is shown in table 1. Thank you. (Methods section, page 3)

Table 1: Pubmed database search strategy
#1 "Femoral Neck Fractures"[Mesh]
#2 Femoral Neck Fractures
#3 Femoral Neck Fracture
#4 Femur Neck Fractures
#5 Femur Neck Fracture
#6 #1 OR #2 OR #3 OR #4 OR #5
#7 "Femur Head Necrosis"[Mesh]
Question 2: You should re-describe the inclusion and exclusion criteria.
Answer: The inclusion and exclusion criteria are redescribed below:
Studies had to fulfill the following criteria for inclusion: outcome was femoral head necrosis; internal fixation for femoral neck fracture; study design included case-control, retrospective, and prospective cohorts, and cross-sectional studies; participants were selected without limitations to regions, ages or social status. Trials were excluded according to following identifications: duplicate or overlapping data, animal experiments, conference abstracts, letters and review articles. Thank you. (Methods section, page 4)

Question 3: Among the studies that reported results after internal fixation of the femoral neck fracture, it was possible that the results of the analysis of complication risks were excluded from this study.
Answer: I think it's a very good reminder and I appreciate it very much. Currently, the risk factors of femoral head necrosis after internal fixation of femoral neck fracture have not been determined, and this meta-analysis is only a quantitative analysis of previous studies. Therefore, we should objectively reflect the materials provided by the original literature, and we cannot guarantee that all risk factors have been included. Thank you.

Question 4: There are no definitions for the internal fixation methods, and studies that compare the internal fixation methods are likely to be excluded.
Answer: Of the 17 studies included, 12 studies reported cannulated screw internal fixation, 3 studies reported cannulated screw fixation or dynamic hip screw fixation, 1 study reported dynamic hip screw fixation, and 1 study reported cannulated screw fixation or cannulated screw combined with dynamic hip screw fixation or locking compression plate fixation. As indicated in the answer to question 1, the Medical Subject Headings (MeSH) and non-MeSH used in this
study in literature retrieval include “Fracture Fixation”, “Fixation” and “Internal fixation”. We think that through these relevant searches, it should be possible to include literature comparing different internal fixation effects. Thank you.

Question 5: I recommend rewriting only studies that include some risk factors with debate.
Answer: Thank you for your suggestions. After careful discussion, our research team believes that meta analysis should objectively reflect the results of previous studies rather than selectively report controversial issues. We believe that such a change would be contrary to objective facts. Please forgive me if I have offended you. Thank you.

Question 6: There was no presentation of data extracted from this study. You should clearly explain the type of preoperative traction, status of implant, mechanism of ONFH, etc.
Answer: The explanation have been explained in the revised manuscript. 2 studies reported preoperative traction, 1 study reported skeletal traction, and another study did not indicate traction type; 3 studies reported the status of implants, including removal and retention of implants in the body. I must apologize for the "mechanism of ONFH ", which is a writing error, the correct expression is "mechanism of injury", it includes high-energy injuries and low energy injuries; 3 studies reported fracture reduction mode, it includes open reduction and closed reduction. Thank you. (Results section, page 5)

Question 7: You should clarify the reason for the exclusion of the studies presented in Figure 1.
Answer: Related changes have been made. The flow chart describing the selection process of the study was shown in Figure 1. Thank you. (Figure Legends section, page 16)

The above are all our modifications. If there are any inappropriacies, please give me another chance to correct them. Thank you.

Best regards!
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