

Peer Review File

Article information: <https://dx.doi.org/10.21037/amj-23-127>

Comment 1: This article is a narrative literature review of the use of artificial disc replacement (ADR) vs fusion to treat lumbar degenerative disc disease (LDDD). The authors recognized the controversy regarding the use of ADR and fusion and sought to examine the existing data so that surgeons can make informed decisions about whether to select ADR or fusion to treat LDDD for their patients. The paper is generally well written but requires major revision.

Reply 1: Thank you for summarizing the type and objective of the manuscript. We will try to address your comments to the best of our abilities.

Comment 2: There is no mention of the methodology of the database search in the methods section, such as the number of articles that initially resulted from the search, how many were selected and what was the determination for selecting the articles. Be more specific about the methodology and describe the resulting numbers of articles in each step of the study in the results section. What were the breakdowns with the articles for fusion (posterior vs anterior)?

Provide a breakdown of the type of articles included in the review: original articles (retrospective, prospective, RTC, etc), systematic reviews, and meta-analyses. Include this data in the results section.

Reply 2: Given the fact that the article type is an Editorial Commentary/ Narrative review based on the recommendation of the science editor, we don't believe that there is a need for rigorous methodology and reporting as would be expected in a systematic review. Therefore, if the article type is changed to a systematic review, we will work on addressing this comment. Otherwise, we will omit such details from our revised manuscript.

Comment 3: Describe the VAS, ODI, functional improvements data for the studies reviewed in a comprehensive table so that the reader can see what the differences are between ADR and fusion with the various studies. This is the benefit part for surgeons to understand who are trying the learn more about the topic.

Reply 3: Table including VAS and ODI at 2 years follow up was added to the text.

Comment 4: Depict the types of approach related and implant related complications of the reviewed studies in a table. Obtain more specific information about what the implant related complications are (fracture, migration, instability, subsidence, etc) in the various studies if possible. As a reader, I would want to know what complications are the ADR vs ALIF patients at more risk for? This is the risk part for surgeons to understand who are trying the learn more about the topic.

Reply 4: The specific approach related and implant related complications are not reported in detail among all the included studies. For that reason, it is difficult to discuss the types of complications that would be informative to readers and surgeons. It is more realistic and

clinically relevant to examine the numbers of implant-related complications and re-operations, as these would be more helpful for clinical discussions. These numbers are already included in the original manuscript.

Comment 5: Discuss more about what makes patients good and poor candidates for ADR vs ALIF based on the literature review in the discussion section.

Reply 5: In the discussion section, we added more sentences about the potential candidates for ADR and fusion. We do not believe the literature evidence is rigorous enough to identify clearly the good and bad candidates for either treatment option.