**Reviewer's report**

**Title:** A systematic review of the etiopathogenesis of Kienbock's disease and a critical appraisal of its recognition as an occupational disease

**Version:** 1  **Date:** 8 June 2012

**Reviewer:** Eugene K Wai

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**MAJOR COMPULSARY REVISION:**

A1. In causality assessment, the absence of association strongly argues against causality. However, I am not sure if the author adequately demonstrated if there was evidence for or against association, stating that there was too much heterogeneity to do a meta-analysis. However, there are qualitative systematic methods to assess for association in the literature when there is heterogeneity. I would like to see some results for association. If there is no association then further assessment of the other criteria is moot. If there is association, then there should be more research directed at assessing the other BH criteria.

Other specific comments below:

**DISCRETIONARY REVISIONS**

**ABSTRACT:**

b1 - evidence level 4 may not be understood by all readers and should be elaborated on

b2 - would have liked to see some results on association for all factors and evidence for the other BH criteria

b3 - the final statement of the abstract suggests that there is strict criteria for evidence evaluation to be included in the ILO. The authors should either present these criteria in the intro or tone down the final sentence. Best I can tell, the authors have taken a statement from the ILO and applied their own criteria.

**INTRODUCTION:**

b4 - Paragraph 3 - I would like a stronger argument that the ILO and ELOD requires proof of causality to be considered listing as an occupational disease. A. Association with a risk factor may be adequate for certain purposes and B. No evidence could imply that the evidence refutes a relationship or that there are no studies that have been done to date that adequately address the question.

b5 - Paragraph 4 starts off with a discussion of Bradford Hill's criteria and then finishes with a discussion on the history of association of KD with risk factors. I would have liked a more thorough discussion of B.H.'s criteria and specific issues of these as it relates on how the review is structured.

**METHODS:**
b6 - what methods of bias reduction were employed to identify and exclude articles identified in the search.

b7 - paragraph 3, what is an "occasional cause" of kienbocks.

b8 - Strictly using the Oxford criteria may not be appropriate given the rarity of this disease. I doubt there would ever be any RCTs on this topic and as such and given the rarity of this disease likely never. As such the level of evidence will never get about level 4. There are other methods to assess level of evidence for rare diseases

b9 - What method was used to assess the quality of studies identified.

b10 - Studies with no significant results may have been underpowered. How was this accounted for?

b11 - I would like to know that for the critical criteria of "unlikely linked to KD", that there was a stricter criteria than a reviewer concluding this after reading the paper. To reduce bias, were there any ad hoc criteria? Was there a structured assessment? It should be discussed how agreement was measured and presented in the results as evidence of validity of this approach

b12 - This paper purports to assess occupational risk factors but seems to limit to vibration. How about Trauma as an occupational risk factor?

RESULTS

b13- Association: The authors conclude that they could not do a meta-analysis to assess for association because of heterogeneity. However, qualitative assessments could be done to summarize if an association or trend exists or not.

b14- Consistency: The authors argue that only 35% of identified studies discussed vibration as a possible etiology as a sign of inconsistency. However, A. it is likely that not all papers had the mandate to consider vibration. What is the percentage using this? and B. consistency would apply to observed empirical observations and not what authors chose to put in their paper.

DISCUSSION

b15 - the authors should acknowledge that there summaries are limited likely by the poor quality of studies that are out there, which in part is limited by the rarity of this disease

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests