Reviewer’s report

Title: Prognostic Factors in Sciatica: A Systematic Review

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Reviewer: Vicki Kristman

Reviewer’s report:

The research question posed is well defined and there is a strong rationale provided for it. This is a clearly written manuscript. I have the following suggestions for the authors to consider:

Major Compulsory Revisions

Methods, Methodological quality assessment: A 17-item checklist was used to assess methodological quality where high quality studies were those that met all but two of the assessment criteria. This is problematic because a study that has one serious fatal flaw (for example, if loss to follow-up is approximately 30%, but that loss is potentially associated with both the exposure and outcome (i.e., missing not at random), the results can be seriously biased) would score high on the checklist, but could be seriously biased. Checklists can be used as a guideline for what to examine in studies, but should not be used to score quality. A global evaluation of study quality indicating belief in results would be a better indicator.

Methods, Methodological quality assessment: Studies were not excluded on the basis of methodological quality. This is fine for presenting in Tables such as Table 3 that give an overview of all studies published on the topic; however, it is not appropriate to be including poor quality or fatally flawed studies in evidence tables, such as Table 6. Poor studies do not provide good evidence and their inclusion may make a reader believe there is more evidence for or against an association than there really is.

Methods, Review Process: There is discrepancy between the text and Figure 1. The text indicates that all 3 authors reviewed all 23 potentially eligible articles, while the figure suggests that all 3 authors were only involved for disagreements where consensus was required.

Methods, Data extraction and analysis, second sentence: P-values are not that informative and are susceptible (always significant) to large sample sizes. Would be more useful to present findings for all prognostic factors examined in each study and provide effect estimates and 95% confidence intervals around those estimates, so readers can get a better idea of how study sample size influenced the findings.

Methods, Data extraction and analysis, third sentence: Didn’t all studies included have to have multivariate analyses as per the exclusion criteria?
Results, Tables 5 and 6: As stated earlier, poor quality or fatally flawed studies should not be included in these tables, especially table 6 as this provides a false level of evidence. These two tables are also problematic because many diverse outcomes were measured (pain, function, disability, recovery or psychosocial measures) and all of these may not be influenced similarly by the prognostic factors under study. Therefore, Tables 5 and 6 should define the outcome under study for the particular factor listed.

Minor Essential Revisions

Methods, Exclusion criteria, first sentence: I don’t think the authors meant to exclude “studies evaluating a single prognostic factor” but rather those studies that evaluated a single factor in isolation, without consideration of other important factors. Sentence should be reworded.

Abbreviations: Should CT be Computed Tomography and not Quality of Life?

Discretionary Revisions

Title: May be helpful to indicate the non-surgical population in the title.

Table 3: If possible, would be easier for reader if Table 4 could be incorporated into Table 3 using one column titled “Sciatica definition”.

Results, Tables 5 and 6: After removal of poor quality or fatally flawed studies, it would be useful for readers to see the results stratified by methodological quality. I don’t refer to methodological quality as the score calculated from the scoring tool, but rather more of a Phase analysis as suggested below:

Phase 1 studies are exploratory, hypothesis generating studies characterized by descriptive explorations and demonstration of crude (unadjusted) associations.

Phase 2 studies are also exploratory, but employ matching, stratification or multivariable analyses to identify independent risk or prognostic factors.

Phase 3 studies are confirmatory studies that test a priori hypotheses that test one or more factors as independent predictors of outcome (risk or prognosis). These studies include explicit control for confounding factors.

Based on the exclusion criteria of this review, all Phase 1 studies would be excluded, but it would be helpful to the reader to categorize results by Phase 2 or 3 status.

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.