Reviewer’s report

Title: The likelihood of total knee arthroplasty following arthroscopic surgery for osteoarthritis: a systematic review

Version: 0 Date: 03 Jul 2017

Reviewer: Esther Smits

Reviewer's report:

This systematic review describes the likelihood on having a total knee arthroplasty following arthroscopic surgery. There are several studies that describe the rate of TKA after arthroscopy. Since these findings are not summarized yet, the present systematic review is very useful. The information given in the systematic review is very relevant for clinical practice and therefore it is important to be published. I think the systematic review is well written. However, I am missing some details and some revisions are necessary to improve the manuscript for publication.

My main question is whether the authors performed a quality assessment of the individual studies. This is an important step in a systematic review (see Harris et al. (2013) - 'How to write a systematic review') and I think it should be included in this manuscript. Related to this, the PRISMA guidelines for systematic reviews describe that the risk of bias in individual studies and across studies (PRISMA checklist #12 and #15) should be reported. The authors should include how the risk of bias of individual studies and across studies is assessed and how this information is taken into account for the data synthesis, because it may affect the cumulative evidence. For example, did the authors take into account the potential loss of patients to follow-up in the longitudinal studies that were included in the systematic review? In addition, did all patients who needed a TKA actually get one? Maybe some patients were recommended or needed a TKA, but didn't get one for some reason? If this is the case it could influence the results of the systematic review.

Furthermore, I have some other questions and suggestions:

Abstract

Line 19 'the duration between arthroscopy and TKA'. The review reports the average annual incidence, which is related to the duration between arthroscopy and TKA, but I think it is not the same. If the authors report the annual incidence, this should be reflected in the objectives as well. However, I think it would be good to report the average duration between arthroscopy and TKA as well (in addition to the average annual incidence).
Methods

* Which publication years were included in the search?
* Include quality assessment of individual studies (see my first comment).
* Line 14 page 6: Did the authors include papers on ALL arthroscopic knee surgeries or only when patients had arthroscopic partial meniscectomies?

Results

* In addition to yearly incidence, the authors should include the average duration (in years) between arthroscopy and TKA, because that was one of the objectives and I think it would be informative for clinical practice.
* Add information on what was done during the arthroscopy (APM or also other treatments or maybe only diagnosis?). If patients were included both with and without APM, this could be a study category too which should be taken into account in the analysis (i.e. comparison of 'duration between arthroscopy and TKA' between patients with APM and without APM). This is important especially because the authors describe in the discussion that "APM may lead to more rapid OA progression, leading to TKA more quickly".
* Some p-values were reported in the result section, but the test-statistic values (e.g. t-value or F-value) are missing.
* Line 53-58 on page 9: Selected and Unselected studies were compared (p = 0.0243). What statistical test was used?
* Line 58 on page 9 / line 4 on page 10: How many studies with mean age less/over 65 years?
* Line 7 on page 10 'This difference was statistically significant'. What statistical test was used?

Discussion

* Include a sentence on what was the average duration (in years) between arthroscopy and TKA.
* One of the limitations described in the discussion is that the authors could not perform a meaningful between-country analysis. I was wondering why the authors expect a difference
between countries. Most of the included studies are western countries, do the authors also expect a difference between those countries?

* Could there be any differences between male and female patients or maybe between athletes/non-athletes regarding the duration between arthroscopy and TKA? If so, the authors should think about including it in the analysis.

Table 1

* Line 23; 'Bin et al. (2008)' the reference number is missing
* For the studies that contain multiple unique study arms, include information on which line in the table refers to which study arm.

Figure 1

* What are 'other' reasons for exclusion? (include an example)

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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