Reviewer's report

Title: Is Knee Osteoarthritis a Symmetrical Disease? Analysis of a 12 Year Prospective Cohort Study

Version: 2 Date: 16 January 2012

Reviewer: Michael Anthony Hunt

Reviewer's report:

The authors have conducted a longitudinal study evaluating radiographic changes bilaterally in people at risk for knee OA. They should be commended for a relatively large sample size and valid outcome measures. While I feel that this study has important findings and can potentially contribute to the current literature, I believe that overall, more justification is needed as to how these data are novel. In particular, the introduction is very short, in my opinion, and does not provide a sufficient overview of the current literature (note that some of the important papers have been discussed in the Discussion instead). Indeed, the authors state that 87% of patients awaiting TKA have bilateral knee OA. Some would argue that this is evidence that the majority of those with unilateral OA at a given point in time will most likely progress to bilateral signs/symptoms at some point. As is, the current data simply confirm these findings and lend support to other previously published studies.

Major Compulsory Revisions:

1. In general, based on the data reported and the discussion of previous findings and knowledge in the Discussion, I am unclear what new information this paper provides. We know that people who have OA in one knee are at risk for developing OA in the other knee. We also know that bilateral OA is a common clinical presentation. All of the potential systemic mechanisms that the authors describe (e.g. genetics, malalignment, obesity, gait mechanics) are well-known risk factors for OA development and progression. A stronger case needs to be made regarding the novelty of these findings.

2. While the cohort had a large sample size overall, the actual sizes of those in each cell required for the statistical analysis were small. The authors allude to this, and I feel that this needs to be addressed more in light of the lack of statistically significant findings in the overall results.

3. Please explain why 2 definitions of OA were used (KL1 – which is “doubtful OA” and KL2).

Minor Essential Revisions:

1. It would appear that KL grade was the only benchmark used when reporting radiographic data. Thus, what happened to the joint space width and OARSI-OMERACT classification data? The methods are described, but no data
are reported as far as I can tell.

2. Why were BMI data dichotomized to < 30 and > 30?

3. I did not see any data from the 5-year follow-up visit reported.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests