Reviewer's report

Title: Population Prevalence of Ultrasound Features of Osteoarthritis in the Hand, Knee and Hip at Age 63 years: The Newcastle Thousand Families Birth Cohort

Version: 1 Date: 20 February 2014

Reviewer: Joyce van Meurs

Reviewer's report:

The manuscript of Abraham et al describes ultrasound features in a population based sample. This is a straightforward paper, describing prevalence of a number of features in an open population for the first time.

Comments:

1. A drawback of the paper is that no comparison was made with radiographic scoring of osteophytosis, which is the classical way osteophytosis is scored. This makes it impossible to compare the ultrasound features to the radiographic features. Please add to the discussion that this is a limitation.

2. There is a comparison of overall prevalence of OA with a number of previously published prevalences in different populations in the discussion, but this comparison has major limitations. As illustrated by the authors, prevalence of OA is very different across different cohorts. A major cause for this is the different scoring of the radiographs (see manuscript by Kerkhof et al, PMID: 21059398). Sometimes, radiographic OA is defined as presence of only one osteophyte (which is also the definition here for ultrasound), but in other studies more radiographic features must be present in order to have OA. In addition, this is different for hip, knee and hand. So, comparing overall prevalences in the different populations, without precise knowledge on how the OA was defined, makes no sense. Please adjust the discussion by looking into the precise definitions of the referred studies.

3. There is a mention of a prevalence of so-called generalized OA. How was this defined? How does this relate to previous study definitions?

4. Please note that radiographic hipOA definitions are in general more focused on cartilage degeneration (at least the KL2 cut-off is). This could explain the much higher prevalence of hip OA (here defined as presence of one osteophyte). Please add this to the discussion.

5. Kappa statistics was calculated on only 25 participants, which is a low number. This is also reflected in large confidence intervals for the kappa-statistics. It would be best to have a larger number of people scored by 2 people. Otherwise, please add to the discussion that the kappa-statistic estimates were uncertain for a number of phenotypes.

6. Previous studies have reported higher prevalence of knee OA in women compared to men. Why is this not found in this study population?
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.