Reviewer's report

Title: Arthroscopic Partial Meniscectomy in Middle-Aged Patients with Mild or No Knee Osteoarthritis: A Double-Blind, Randomized Sham-Controlled Multi-Centre Trial

Version: 1 Date: 17 August 2012

Reviewer: Morgan Jones

Reviewer's report:

This is a nicely written description of a well-designed trial that will answer an important question about the efficacy of arthroscopic partial meniscectomy in younger patients with mild osteoarthritis. My major concern, explained in the numbered comments below, is that the study may be criticized for being underpowered if it shows no difference between the two groups.

Major Compulsory Revisions

1) The authors mention the issue of arthroscopic surgery during the follow-up period, which represents either re-operation or crossover from non-operative to operative treatment. In some ways this represents another secondary outcome measure. However, it is unclear from reading the manuscript what criteria will be applied to determine whether or not patients undergo a repeat arthroscopy, and whether any of the subsequent care (such as repeat MRI) might unblind the patients or the treatment team.

2) While the sample size determination is very clearly presented based on the primary outcome, the number depends very much upon the standard deviation and clinically important difference chosen for this calculation. The authors should better explain and support their reasons for these numbers, as some investigators have suggested a clinically important difference of 8 points for individual scales of the KOOS, which would increase sample size to 124 if accounting for 10 percent dropout.

3) The authors framed their study as a trial that may fail to demonstrate that arthroscopy is better than sham surgery for younger patients with meniscus tear and that the study has the potential to change practice. However, a study with 80 percent power and the somewhat larger clinically important difference leads to a smaller sample size and less potential to change practice if the groups are not statistically different.

4) The authors describe joint space width narrowing as a secondary outcome. It would be helpful if they could present the difference they might expect to detect with the sample size that they have proposed.

Minor Essential Revisions
Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I am an investigator on a randomized trial of arthroscopic partial meniscectomy for older patients with symptomatic meniscus tear and mild to moderate osteoarthritis. Otherwise, I declare that I have no competing interests.