Reviewer's report

Title: Clinical investigation for displaced proximal humerus fractures in elderly. A randomized study of two surgical treatments: Reverse Total Prosthetic Replacement versus angular stable plate Philos (The DELPHI-trial).

Version: 5 Date: 27 March 2014

Reviewer: Georg Osterhoff

Reviewer's report:

Reviewer's comments

Title: Clinical investigation for displaced proximal humerus fractures in elderly. A randomized study of two surgical treatments: Reverse Total Prosthetic Replacement versus angular stable plate Philos (The DELPHI-trial).

Authors: Fjalestad T., Iversen P., Hole MØ., Smedsrud M., Madsen JE.

General comments

This intended trial is a very interesting study comparing the radiological and clinical outcome of the surgical treatment with either a reversed total shoulder prosthesis or angular stable plate fixation for the displaced proximal humeral fracture in elderly patients.

Except some inaccuracies, the manuscript is well written. The intended study is going to enlighten an important and much discussed aspect in the area of proximal humeral fractures and their treatment.

With some minor revisions I suggest to accept the submitted study protocol for publication in BMC Musculoskeletal Disorders.

1. Will the study design adequately test the hypothesis?
   YES

2. Are sufficient details provided to allow replication of the work or comparison with related analyses: if not, what is missing?
   YES

3. Does the manuscript adhere to the relevant standards for reporting and data deposition: if not, in what ways?
   YES

4. Is the writing acceptable?
   Except some minor corrections: YES

Specific (minor essential) comments
1. Title
Would suggest:

2. Abstract

3. Background / Aims
Well written.

4. Materials and Methods
p 11, line 376 Would suggest “Arthroplasty” instead of “Artroplasty”.
p 11, line 355 What about the lateral displacement as a predictor for avascular head necrosis as described by Hertel et al (Ref 20). This usually would be a strong argument for arthroplasty in any patient and should be documented for a post-hoc confounding factor analysis.
p 13, line 416 Inclusion “started”...?
p 13, line 427 In line 425 it says “60 patients” in line 427 and 429 it’s 55. Where did the others get lost?
p 17, line 543 This paragraph is very similar to the paragraph on p 13, line 416 with the inclusion still starting in the past but now predicting end of inclusion in autumn 2015 (vs. spring 2016). Please delete one of both paragraphs and adapt time specifications.

5. Discussion
Very well written and interesting.
p 19, line 626: “have been reported” instead of “has been..”
p 19, line 627: “design” instead of “designs”

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 declare that I have no competing interests