Letter regarding article by Ni et al.: press-fit cementless acetabular fixation with and without screws

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To the Editor,

In International Orthopaedics, Sheng-Hui Ni et al. [1] conducted a meta-analysis to compare fixation of acetabular cups with and without screws in total hip arthroplasty (THA) which they have done very well. A total of 1,130 THAs enrolled into five trials were finally included in this meta-analysis. They calculated the pooled risk differences (RDs) by using random-effects models or fixed-effects models and observed no statistical significance between the two surgical methods in revision, migration and osteolysis. Before their results can be accepted, I would like to express four concerns in relation to their meta-analysis.

First, the authors searched only three electronic databases (Embase, PubMed and Cochrane Library) for studies reporting on THA performed with cementless acetabular fixation and screws. The small number of required papers would be an important limitation of the review. We hope that more electronic databases can be systematically searched.

Second, the authors might have made a mistake in the results section. They stated that five RCTs comparing

cementless acetabular fixation with and without screws were included. However, there are three RCTs and two cohort studies in the meta-analysis. They should make this clear by citing five trials rather than five RCTs.

Third, it is not appropriate that a summary RD estimate with corresponding 95 % CIs were derived by using the method of Mantel-Haenszel (M-H) with the assumptions of a random-effects model. Rather, studies should be combined by using the DerSimonian and Laird random-effects model [2].

Lastly, it is not sufficient that publication bias was only assessed by visual examination of a funnel plot. Funnel plot symmetry should be further assessed by statistical tests (e.g., Egger's linear regression test or Begg's rank correlation test). Moreover, in this meta-analysis, publication bias was only assessed for re-operations and migration. Actually, publication bias should be also assessed for osteolysis. Therefore, publication bias may be present, distorting the meta-analysis.

We agree on the following conclusions of the authors in that there is no significant difference between cementless acetabular fixation for THA with and without screws in revisions, migration or osteolysis. Moreover, further larger, high quality studies are needed to compare fixation of acetabular cups with and without screws in THA.

Disclosures None.

Reference

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