

Letter to the Editor

Cemented Hemiarthroplasty Confers Less Pain and Better Mobility than Uncemented Hemiarthroplasty

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To the Editor:

We read with interest the article, “Systematic Review of Cemented and Uncemented Hemiarthroplasty Outcomes for Femoral Neck Fractures” by Ahn et al. [1], which concluded there was no significant difference between cemented and uncemented techniques for reported outcome measurements of femoral neck fractures. Respecting the highly influential status of systematic review in the hierarchy of evidence, we wish to bring attention to three important issues.

First, seven trials, two randomized controlled trials [RCT] [15, 16], and five retrospective trials [6, 8, 14, 18, 19] could have been retrieved and included in the meta-analysis. In addition, one RCT [2] was retrieved but not included. The authors arbitrarily searched the literature after 1980

while missing two classic trials [15, 19] before 1980. As a result, there is a definite bias of selection that may lead to an inappropriate conclusion. Unfortunately, no detailed reasons were provided to justify their search strategy.

Second, we would like to offer some observations regarding their data extraction (see Supplementary website material) and pooled analysis. (1) The data referring to Eiskjaer et al. [4] was in fact extracted from another article from Eiskjaer and Østgård [5]. A similar instance is seen with Lausten et al. [12], which should be replaced by the earlier article by Lausten and Vedel [11]. (2) It appears the authors neglected the cemented group with Hastings prosthesis in the article by Eiskjaer and Østgård [5]. The mortality of this group was not included. Also, neither the revision rate nor the followup was extracted. (3) Gebhard et al. [8] reported six revisions in each group by 1 year. However, these data were mistakenly included in the column, “Complication” of their Supplementary Website Material. (4) The authors failed to explain why 15 cemented cases and 61 uncemented cases with thigh pain were not included in the subgroup of Lo et al. [13]. (5) In the report by Sonne-Holm et al. [17], 11 deaths that occurred in each group by 6 weeks were not listed in their Supplementary Website Material. Also, Sonne-Holm et al. noted only 30% of the patients with cemented prostheses (12 patients) reported pain compared with 60% of the patients with uncemented prostheses (21 patients) after 6 months. The result contradicts those of 23 cases versus 13 cases extracted by Ahn et al. [1]. (6) There were actually three revisions reported by Dorr et al. [3] instead of four revisions. (7) The correct order of Fig. 2 in the meta-analysis [1] should be “(A) intermediate mortality,” “(B) long-term mortality,” “(C) perioperative mortality,” “(D) complications,” “(E) pain,” and “(F) revision.” (8) The mortality data within 1 month by Foster et al. [7] should

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(Editor’s note: A reply was requested from Ahn et al.; however, none was received.)

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Fig. 1 Forest plots of the pooled RR for pain in followup are shown. (Adapted and published with permission from Ahn J, Man LX, Park S, Sodl JF, Esterhai JL. Systematic review of cemented and uncemented hemiarthroplasty outcomes for femoral neck fractures. *Clin Orthop Relat Res.* 2008;466:2513–2518.)

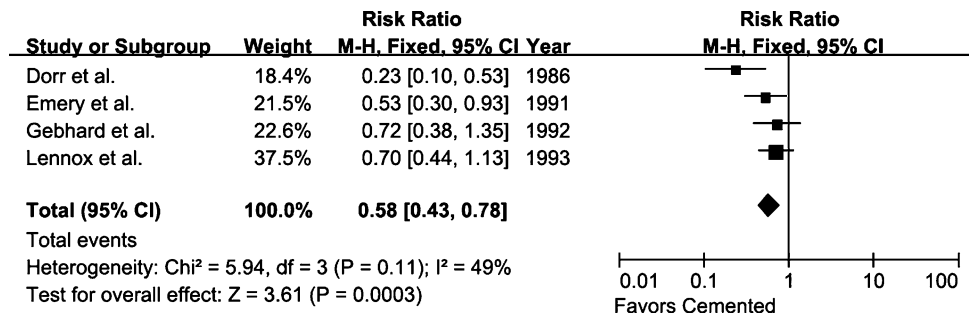
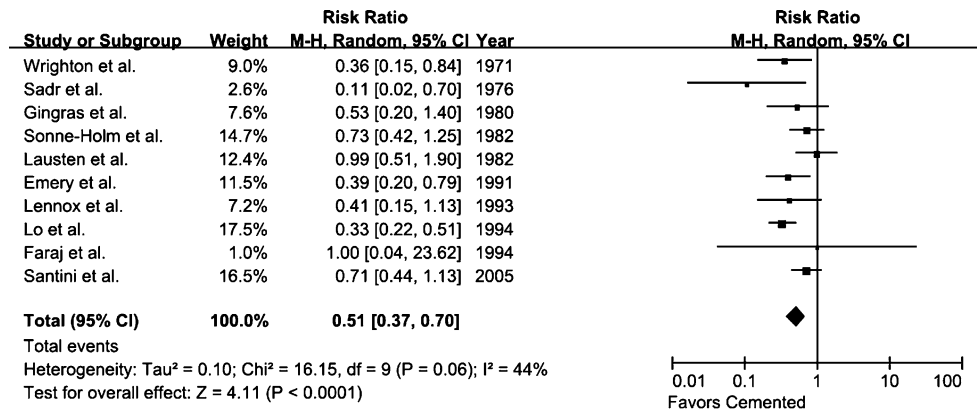


Fig. 2 Forest plots of the pooled RR for use of assistive devices in followup are shown. (Adapted and published with permission from Ahn J, Man LX, Park S, Sodl JF, Esterhai JL. Systematic review of

cemented and uncemented hemiarthroplasty outcomes for femoral neck fractures. *Clin Orthop Relat Res.* 2008;466:2513–2518.)

Table 1. Results of subgroup meta-analysis for mortality

Mortality	Study	RR favoring cemented	95% CI	p Value	Q*	Model
< 1 month	Foster et al. [7]	1.07	0.73–1.57	0.73	0.10	Fixed
< 3 months	Eiskjaer and Østgård [5]	1.24	0.81–1.88	0.32	0.79	Fixed
≥ 6 months	Khan et al. [10]	0.90	0.73–1.10	0.31	0.62	Fixed

* The significance of Q test; RR = relative risk; CI = confidence interval.

have been included in the subanalysis for perioperative mortality, not that for intermediate followup.

Considering all the above points, we did a second meta-analysis with updated data. The results showed the risk ratios (RRs) of pain (Fig. 1) and use of assistive devices (Fig. 2) were lower in the cemented cohort than in the uncemented cohort, which supported previous results [10]. Similar to the original meta-analysis, no difference was found in the RR of outcomes for mortality (Table 1), complications (RR, 0.85; 95% confidence interval [CI], 0.69–1.05; p = 0.13; fixed-effects model), and revision (RR, 0.61; 95% CI, 0.30–1.26; p = 0.18; random-effects model). For mortality, interestingly, the trend of favoring the uncemented group was inverted to that of favoring the cemented group as the followup extended (Table 1). The change in trend probably is attributable to more perioperative complications, higher stability, and better postoperative mobility associated with the cementing

technique [10]. More evidence is required to confirm the superiority of cemented hemiarthroplasty in long-term survival. Based on the pooled evidence, we believe cemented hemiarthroplasty confers less pain, better mobility, and possibly lower long-term mortality compared with uncemented hemiarthroplasty. However, given the low methodologic quality and great heterogeneity of studies, all conclusions should be applied with caution.

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