

PEER-REVIEW REPORT

Name of journal: *World Journal of Orthopedics*

Manuscript NO: 69040

Title: Periprosthetic joint infections in femoral neck fracture patients treated with hemiarthroplasty – should we use antibiotic-loaded bone cement?

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 02587914

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Spain

Author's Country/Territory: Germany

Manuscript submission date: 2021-06-16

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-06-20 09:03

Reviewer performed review: 2021-06-26 17:09

Review time: 6 Days and 8 Hours

Scientific quality	☐ Grade A: Excellent ☒ Grade B: Very good ☐ Grade C: Good ☐ Grade D: Fair ☐ Grade E: Do not publish
Language quality	☒ Grade A: Priority publishing ☐ Grade B: Minor language polishing ☐ Grade C: A great deal of language polishing ☐ Grade D: Rejection
Conclusion	☐ Accept (High priority) ☒ Accept (General priority) ☐ Minor revision ☐ Major revision ☐ Rejection
Re-review	☒ Yes ☐ No

Peer-reviewer statements	Peer-Review: ☒ Anonymous ☐ Onymous
	Conflicts-of-Interest: ☐ Yes ☒ No

SPECIFIC COMMENTS TO AUTHORS

This is a retrospective, cohort study which includes 241 patients undergoing cemented hemiarthroplasty from 2011 to 2017 in a single center. The authors aim to determine how much the implementation of routine use of antibiotic-loaded bone cement (ALBC) to the surgical practice reduces the infection rate in their hemiarthroplasty cohort. Undoubtedly, the subject studied by the authors is of great relevance since periprosthetic infection (PJI) is a devastating complication in patients with proximal femur fractures, often elderly, institutionalized and affected by multiple comorbidities. In their study, the authors compared the incidence of PJI in this patient subgroup between two periods, from January 2011 to June 2013 (non-ALBC group) in which they use plain cement and the one after the implementation of this strategy July 2013 to December 2017 (ALBC group). Although there is evidence on the efficacy of this strategy during reimplantation surgery to treat infected total hip arthroplasties situation in which a recent meta-analysis concluded it reduces infection rates by approximately 50% (Parvizi, J. et al. Efficacy of antibiotic-impregnated cement in total hip replacement: A meta-analysis. *Acta Orthop.* 2008, 79, 335–341), there is not much published evidence in this regard when it comes to patients undergoing hip hemiarthroplasty. The work is professionally written and confirms the use of cement with antibiotics is an effective strategy in terms of reducing the incidence of PJI by 55,3% (95% confidence interval 6,2-78,7%; $p=0,0025$) Furthermore, in their analysis, the authors show that implementing this strategy is cost effective with a cost saving of approximately 3.505 € for each patient after switching to the ALBC Palacos R+G. In their work, the authors specify that they use cement loaded with gentamicin, but there are publications regarding the use of high-dose dual antibiotic-impregnated



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(vancomycin and gentamicin) improving Gram-positive coverage which may be relevant in this subgroup of patients, among whom MRSA colonization is more frequent than in the general population. The authors already discuss this fact in their work and in fact point out that they will probably start using dual ALBC in their FNF patients. We look forward to a prospective design in this regard and to be able to see your published results in the future. As strengths of the work highlight the uniform management of all included patients (all in the same center, operated by the same surgical team) and the one-year follow-up of all the patients analyzed. The limitations of the study (small sample size, groups not well balanced ...) have also been clearly stated by the authors. I consider that this experience is relevant, and it may help will help to better manage and therefore that the article deserves to be published without changes.