Reviewer’s report

Title: Impregnation of bone chips with alendronate and cefazolin, combined with demineralized bone matrix: a bone chamber study in goats.

Version: 1 Date: 20 November 2011

Reviewer: jorgen baas

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The authors conducted a randomized, paired experiment in sheep using 8 bone conduction chambers in each animal. They investigating the early effect of locally applied 1) alendronate in 4 different concentrations 2) cefazolin and 3) DBM on morcellized allograft.

The authors found a dose-dependent protective effect of alendronate on allograft resorption. An optimum effect on new bone formation was found. There was no statistically significant effect of adding cefazolin or DBM to the allograft.

The model is well-established and the aim of augmenting bone graft for the purpose of achieving mechanically stable and osseointegrated joint replacement implants in revisions where allograft bone is needed is clinically relevant. The results are interesting and of value for this field of research.

The manuscript is easily read. Certain misspellings were noted, but no language revision or corrections have been made in this review. The results are well synthesized with the literature in the field. The limitations of the model are explained. The interpretations and conclusions are mostly valid (see below).

Minor Essential revisions:
1. A table of the histomorphometric comparisons conducted between the groups and the exact p-values stated in a separate table (new bone and allograft bone) to ease data overview
2. The safety of the use of topical cefazolin should be discussed in closer light of the statistical difference of the groups w/wo cefazolin, since the study was powered to show differences, not equality between groups. Also, the dose of cefazolin should be discussed, as the graft was rinsed after adding cefazolin.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests