Reviewer's report

Title: A randomized, double-blind, placebo-controlled trial of calcium acetate on serum phosphorus concentrations in patients with advanced non-dialysis-dependent chronic kidney disease

Version: 2 Date: 17 November 2010

Reviewer: David Wheeler

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The authors present the results of a randomised double-blind placebo-controlled trial of calcium acetate in CKD stage 4-5 patients not receiving dialysis at the time of recruitment. They may wish to consider the following comments in relation to their study.

1. More details of the interventional product are required. What is the dose? Is this product manufactured by one of the companies with which the authors are affiliated?

2. As the authors concede, the study would have been made more interesting if urinary phosphate excretion had been reported. Likewise, measurement of serum fibroblast growth factor-23 levels would have made this manuscript more competitive.

3. The high dropout rate was clearly a problem and needs to be explained in more detail. What happened to patients in whom phosphate remained “uncontrolled” (>5.5 mg/dl) despite taking 15 tablets per day. Were these patients compliant based on pill counts? It is assumed (but not stated) that no patients started dialysis during the study.

4. Was the PTH higher in the calcium acetate treated group because the serum calcium was higher or serum phosphate was lower? Might the potential cardiovascular benefits of a lower serum phosphate levels be offset by higher serum calcium levels? What is the evidence that hypocalcaemia (which occurred more commonly in the placebo group) is harmful? These issues should be discussed in more detail.

5. The authors need to comment on dietary phosphate restriction (if any) and whether dietary phosphate intake was likely to have changed during the course of the study in either group.

6. Page 3. The syndrome of the CKD-Mineral Bone Disorder is not “newly described”, but perhaps newly redefined.

7. The authors discuss the KDOQI guidelines on management of the mineral bone disorder, but not mention the newer KDIGO guidelines that superseded.

Level of interest: An article of importance in its field
Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
In making a decision, the editorial board need to bear in mind that the reviewer is involved in two similar studies.