Reviewer's report

Title: A Low Fractional Excretion of Phosphorus/Fgf23 Ratio is Associated with Severe Abdominal Aortic Calcification in Non Dialyzed Kidney Disease Patients

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Reviewer: Orlando Gutierrez

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Craver et al. present cross-sectional association of fractional excretion of phosphate (FEP), FGF23 and abdominal aortic calcification. They suggest that a ratio of FEP to FGF23 may help identify individual at high risk of abdominal calcification. I have the following comments:

1. The most appropriate way to have approached their hypothesis was to examine whether the level of AAC modifies the association of FGF23 with FEP (i.e., testing the interaction). If it does, this would indeed suggest that the association of FGF23 and FEP differs by AAC level. The way the authors did it does not assess whether the slopes of the lines they depicted graphically actually statistically differ by AAC status. They must do this in a revised manuscript.

2. The authors mention frequently that the lack of an association of FGF23 with FEP suggests resistance to the phosphaturic stimulus of FGF23. Given that this is a cross-sectional study, there is no way to know this. Therefore, it needs to be emphasized that this conclusion is entirely speculative, and the Discussion should be reflect this.

3. Why would there be "resistance" to FGF23 but not to PTH (at least with respect to the associations of PTH and FEP) when they both act on identical channels in the proximal tubule? This undercuts the authors' hypothesis and should be discussed in more detail.

4. Please add eGFR to Table 1

5. In the Methods, the spelling of the FGF23 assay company is wrong (should be Immutopics).

6. How was Klotho measured? This should be in the Methods

7. when were patients recruited (how many years ago); was the lack of access to sevelamer or paricalcitrol due to funding restrictions in Spain or because participants were recruited before these medications were available.

8. When were assay measurements made? Immediately, or were samples stored and measurements done later?

9. When using Kauppila Index in the multivariable analyses, where was linear regression analysis used? Since the index is a discrete, count variable, Poisson
regression would have been more appropriate. Please provide a reasonable explanation for using linear regression, or please use the proper methodology.

**Level of interest:** An article whose findings are important to those with closely related research interests

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

**Statistical review:** Yes, and I have assessed the statistics in my report.