Reviewer's report

Title: Fibroblast growth factor-23 and calcium phosphate product in young chronic kidney disease patients: A cross-sectional study

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Reviewer: Armando Negri

Reviewer's report:

I missed the point of “univariate one-Phase exponential association”. The same as reviewer 1, I do not know what that means.

If you see a previous work of the same authors on 61 patients (probably theyt are part of the present study):

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Impaired GFR is the most important determinant for FGF-23 increase in chronic kidney disease

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Abstract:

Objectives: It is unclear whether fibroblast growth factor-23 (FGF-23) increases in response to phosphate accumulation or to decrease clearance in chronic kidney disease (CKD) as is the case with other lowmolecular weight proteins such as cystatin C (CysC).

Design and methods: This cross-sectional study measured serum FGF-23, CysC, and other serum markers of bone metabolism in 69 patients, aged 18 months–24 years, with various stages of CKD (eGFR=11–214 mL/min).

Results: FGF-23 levels were significantly correlated with CysC and parathyroid hormone levels (PTH) on univariate non-linear regression analysis. In multivariate linear regression analysis, log (CysC) (#=0.660, pb0.0001), log (PTH) (#=0.038, p=0.37), and phosphate (#=0.222, p=0.028) explained 69.1% of the variance of FGF-23.

Conclusions: CysC had the largest unique contribution to FGF-23 variance in this model, supporting the
hypothesis that renal clearance may be the most responsible factor for elevated FGF-23 levels in early stages of CKD.

For the relationship between FGF23 and CysC and PTH they used a univariate non-linear regression analysis.

It seems to me that univariate one-phase exponential association is the same in other words. Reviewer 1 is correct in that the first figure is from a linear regression.

It is also true that in the abstract they use Pearson correlation coefficient as the measure of the correlation between variables that is parametric but in the text and tables they use Spearman's rank correlation coefficient that is a non-parametric measure of statistical dependence between two variables. Again, reviewer 1 is correct. The authors claim that data are non-parametric and as far as I know FGF23 and PTH are not normally distributed so correlations should be done with Spearman

There are several questions:
1. Why the same authors on similar data use different statistics?
2. Why if data are non parametric in the abstract they use Pearson correlation that is for parametric data?

Paper should have a major revisions, but a statistical reviewer is needed.