Reviewer's report

Title: Low serum creatinine is associated with type 2 diabetes in morbidly obese women and men: a cross-sectional study

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Reviewer: Carlos Lorenzo

Reviewer's report:

This manuscript is a revision of a previously submitted paper on the relation of serum creatinine to prevalent type 2 diabetes among morbidly obese Caucasian women and men with eGFR >60 ml/min/1.73 m2. The results indicate that serum creatinine is associated with prevalent type 2 diabetes in Caucasian morbidly obese patients.

The paper is much stronger. Some variables and conclusions have been redefined and perfected, respectively. I am satisfied with the comments of Hjelmesæth et al. I do not agree with some of them, although I understand that the authors may validly hold their own.

In this regard, I have a few of comments:

1.- Measures of muscle mass are often absent in studies that relate body composition to insulin resistance and diabetic risk, but a potential relationship between skeletal muscle mass and insulin resistance is at least controversial. The authors described some studies in which a direct relationship is observed. Other studies, however, have described no relationship. Kuk et al. described no association between whole-body skeletal muscle mass and either glucose tolerance or insulin sensitivity in overweight and obese men and women (Appl Physiol Nutr Metab 2008;33:769). Similarly, Goulet et al. reported not relationship between insulin sensitivity and sarcopenia (loss of muscle mass) in healthy, non-obese, postmenopausal women (Appl Physiol Nutr Metab 2007;32:426).

2.- In this study, there is not apparent relationship between creatinine and muscle mass. As suggested by reviewers 2 and 3, directly measured muscle mass may be necessary to properly assess muscle mass in the morbidly obese. Additionally, the authors indicate in page 8, para 2, line 2: “Serum creatinine does not correlate significantly with lean body weight (data not shown)”. I think it is simple to show the results by adding a couple of correlation coefficients.

3.- Age is used in the MDRD and the Cockcroft-Gault equations to estimate eGFR and CrCl respectively. In Table 1, men and women with diabetes do not differ from counterparts without diabetes in terms of CrCl, but differ in terms of creatinine. Individuals with diabetes are 8 to 9 years older than those without diabetes. This fact needs to be taking into consideration, because CrCl decreases with age. This could explain the relation of creatinine to prevalent
diabetes and the absence of relationship between CrCl and prevalent diabetes.

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

**Quality of written English:** Acceptable

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

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