Reviewer's report

Title: Detection of decreased glomerular filtration rate in intensive care units: serum cystatin C versus serum creatinine

Version: 1 Date: 7 June 2013

Reviewer: Mitra Mahdavi-Mazdeh

Reviewer's report:

The authors measured GFR by serum creatinine, Cystatin C and urinary 4 hour clearance of iohexol in 54 patients and excluded the data of 3. The strongest points of their work were:
- Having an standard reference for comparison between serum Cr and Cys
- Measurement of creatinine was by enzymatic method instead of Jaffe.

However, I am concerned about some issues:
1- The discussion about muscle mass does not seem to be the matter as it is a limiting factor for GFR calculation and its comparison among different people. The main problem of serum creatinine in critically ill patients is its lag of increase after the GFR decrease and the physicians need a more sensitive tool to assess renal function which the authors could show the importance of serum Cystacin C measurement. So, I strongly suggest that this item be included in the introduction and discussion.

2- Comparing Scr and S Cys with iohexol derived GFR may not be enough. The GFR should be calculated by one of the formulas in the literature and the figures be reevaluated. For this part the muscle mass can play a role.

3- If the authors measured Thyroid function or a quantitative index of inflammation (such as CRP). They have a confounding impact on serum cystatin level.

4- The readers may need to have a better explanation of included patients and underlying diseases. As by measuring GFR, height, weight and BMI would not add so much to the importance of the table.

Level of interest: An article of importance in its field

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'