Reviewer's report

Title: Prevalence of low glomerular filtration rate, proteinuria and associated risk factors in North India using Cockcroft-Gault and Modification of Diet in Renal Disease equation: an observational, cross-sectional study.

Version: 1 Date: 17 November 2008

Reviewer: Roberto Minutolo

Reviewer's report:

GENERAL
The topic addressed is very important and the methodology is adequate. However, some conclusions are not supported by the cross-sectional nature of this study.

- Major Compulsory Revisions

1. The main concerns is related to the mis-interpretation of the information obtained by an cross-sectional study. Indeed, this design does not allow revealing cause-effect relationship but only associations. This is the case of the relationship between obesity and the presence of CKD. On this regard, the term predictor must be deleted throughout the manuscript because it is impossible to predict an event (in this case the CKD) by using cross-sectional data. Therefore, also the comparisons made by the Authors with other “prospective” studies on this issue (obesity and CKD) seem inappropriate.

2. The most clear example of this mis-interpretation can be found when Authors discuss on the proteinuria result (The presence of proteinuria significantly increased odds of having CKD. Similar opinions were expressed in a study on Japanese volunteers, where detection of proteinuria by dipstick increased risk of having ESRD 14 times [43]). The present study simply shows that proteinuria is associated with low eGFR (cross-sectional design) but not that it is the cause of CKD; therefore, this result cannot be compared to Okinawa study [Ref 43] (observational prospective study).

3. The same holds true when examining results on smoking habit and alcohol intake. Once again, no cause-relationship can be achieved by this cross-sectional study!. On the other hand, it seems reasonably to hypothesise that the lower prevalence of smoking and alcohol use be secondary to the awareness of having CKD.

4. On this regard, have Authors recorded this information (patient's awareness of CKD) in the questionnaire like they did for hypertension and diabetes?

5. Authors should more extensively explain why the two formulas used gave an estimated prevalence so different and if there are clear data supporting the choice of either MDRD (Ref 6) or Cockroft-Gault (Ref 7) equation. Authors should consider including a figure reporting the Bland-Altman analysis or a 2-panel
figure with frequency of eGFR measurement with both MDRD equation and Cockroft-Gault formula.

6. Authors deliberately do not stage CKD (even though this information at least for stage 3 to 5 is already reported in Table 1). Why? On the contrary, I believe that such information is important in order to compare different national data. Their concern about the single creatinine measurement can be overcome by considering that the vast majority of studies on CKD prevalence are based on single value and that in a screening study at the laboratory level, Garg et al (Garg AX, et al: Identifying individuals with a reduced GFR using ambulatory laboratory database surveillance. J Am Soc Nephrol 16:1433-1439, 2005) showed that the size of this problem is not relevant.

7. Figure 1 is not clear. I suggest to include in panel A median eGFR for males and females and in the panel B the prevalence of low GFR and proteinuria.

8. Figure 2 is even less comprehensible (detecting an absolute number on a log-scale is quite impossible). Authors should try to convert this figure in a table that can be eventually added to Table 1.

- Minor Essential Revisions

NONE

- Discretionary Revisions

Analysis of patients with serum creatinine >1.8 mg/dL is not relevant being only functional to the comparison with ref 3. However, if Authors believe this information necessary, I suggest reporting it in the result section rather than in the table.

1. Description of the multivariate logistic regression model suggests that it is run by using a backward method. If so, it should be added to the paragraph of statistical analysis and deleted from footnotes of Table 4.

2. What is the CKD prevalence across three socio-economic strata (rural, urban and semiurban)? Is there any difference?


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