Reviewer’s report

Title: Chronic kidney disease and underdiagnosis of renal insufficiency among diabetic patients attending Butajira hospital, Southern Ethiopia

Version: 3  Date: 25 October 2014

Reviewer: Matthew Abramowitz

Reviewer’s report:

This is a well written, scientifically sound and methodologically sound study with clear merits for publication. Methods are appropriately described (with small corrections, as suggested). The patient population, study methods, and statistical analyses are well described.

Major Compulsory Revisions:

1. Why is the same cutoff used to define abnormal serum creatinine for both men and women, as opposed to a lower cutoff for women (e.g. 1.3 mg/dL)? Is this typical of clinical practice in Ethiopia? It is not surprising that the prevalence of undiagnosed CKD was higher in women than men – this seems a direct consequence of the definition used here for abnormal serum creatinine.

2. It is also not surprising that the prevalence of undiagnosed CKD was higher in the elderly, as they have less muscle mass than younger people. The authors should comment on this in the Discussion.

3. The authors should also estimate GFR using the CKD-EPI equation and then provide comparisons for all 3 equations. The CKD-EPI equation produces more accurate estimates of GFR than the MDRD equation for GFR>60 (MDRD does not provide valid estimates in this range) – this is especially important as the authors are attempting to classify people as stage 1 and 2 CKD.

4. The definition of stage 1 and 2 CKD includes evidence of damage, not just eGFR. As the authors have no data beyond eGFR such as albuminuria, it is presumptive to classify these individuals as having CKD. A more accurate approach would be to simply classify them as eGFR 60-89 or >=90. It is still fair to say that people in the 60-89 range have reduced eGFR as the authors’ intent is to point out that a “normal” serum creatinine may be misleading.

5. The authors should provide more information regarding the selection of their cohort. What was the random selection process used? Out of how many clinic patients in that period were the study patients selected, i.e. what was the total clinic sample in this period?

6. The definition of CKD requires 2 measurements of eGFR at least 90 days apart. The authors should acknowledge this limitation in the Discussion, and the possibility that they have overestimated the prevalence of CKD if some of these individuals had higher eGFR upon repeated testing 3 months later.

7. The covariates included in the multivariable logistic regression model should
be listed.

Minor issues not for publication:

1. Line 127: “…kinetic alkaline picrate method…” and Line 128: “…calibration traceable to reference material NIST SRM 909 level 2”: As clarification for readers, it would be helpful to state “Jaffe kinetic…” and “traceable to IDMS reference material NIST SRM 909B level 2.” This will make it clear that accepted and familiar standards were used.

2. Line 109: “… register and treat” : should be “registers and treats”

3. Line 115: “… if there none fasting” – should be “if they were not fasting.”

4. Line 144: “Multivariate logistic regression…”: Since in this study, the authors only check S.Cr at one time point, and use that for analysis, there is only one outcome variable; whereas there are multiple independent predictor variables. This analysis is therefore a univariate *multivariable* analysis. See: Multivariate or Multivariable Regression? Hidalgo B, Goodman M. Am J Public Health. 2013 January; 103(1): 39–40. Published online 2013 January. doi: 10.2105/AJPH.2012.300897

**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.