Reviewer's report

Title: Age-related associations of hypertension and diabetes mellitus with chronic kidney disease

Version: 1 Date: 9 February 2009

Reviewer: Claudine T Jurkowitz

Reviewer's report:

1) Major compulsory revisions

1.1 Approximately 18% of the NHANES participants are excluded from the study for the analysis of stage 3-4 CKD and 17% from the analysis of albuminuria. Are the study samples still representative of the overall population? A comparison of the demographic characteristics between the study samples and NHANES would be helpful.

1.2. The attenuation of the association between exposure (hypertension or diabetes) and CKD at older age is very likely due to the higher prevalence of CKD among the non-exposed in older adults. Consequently, the difference between the prevalence in the exposed and the prevalence in the non-exposed is expected to be smaller among the elderly than among the young adults. The authors address this issue in the discussion page 13 but do not base their discussion on concrete results and do not provide a clear conclusion. The prevalence of CKD in the non-exposed groups by age-group should be presented in the results section and this issue discussed earlier in the discussion section.

1.3. What is the rationale for not including undiagnosed diabetes (in addition to diagnosed diabetes) among the confounders in the regression models? (methods page 8)

2) Minor Essential Revisions

2.1. What is the reference category for the prevalence ratio associated with non-Hispanic black?

2.2. Some of the results presented in the text do not match the numbers calculated from the tables. For example, according to the text page 5, the total sample size for the analysis of albuminuria is 12,778 whereas according to table 3 it is 12,798. According to the text page 8, the prevalences of stage 3-4 CKD are 1.4%, 9.9% and 38.3%, whereas when calculated from table 1 they are 1.2%, 9.5% and 37.6%. Likewise the prevalence of albuminuria according to age groups are different when calculated from table 3 (6.8%, 14.8% and 26.8%) from the ones cited in the text page 10 (5.8%, 11.4% and 22.7%).

2.3. The sentence “Trends of lower prevalence ratios of stage 3 or 4 CKD at older age were present for diagnosed (p=0.067) and undiagnosed diabetes
mellitus (p=0.369)” is misleading since the p values are not significant (page 9). Likewise page 10, it should be added that the p value for trend was not significant for obesity and high cholesterol.

2.4. The first sentence of the discussion (page 11) is not accurate. Associations between hypertension and stage 3-4 CKD or between diabetes and stage 3-4 CKD were not present for all age groups. Several 95% confidence intervals include 1 (all of the CIs associated with undiagnosed diabetes, and the one associated with hypertension in the youngest age group)

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

'I declare that I have no competing interests'