Reviewer's report

Title: All-cause and cause-specific mortality associated with diabetes in prevalent hemodialysis patients.

Version: 1 Date: 22 May 2012

Reviewer: Bo Hu

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The paper “All cause and cause-specific mortality associated with diabetes in prevalent hemodialysis patients” by Sattar et al. shows that diabetes is associated with an increasing risk of all-cause mortality over time among ESRD patients, based on an analysis of the data in HEMO study. The authors compared results from a standard Cox model, a Cox model with an interaction between diabetes and time, and a time-varying coefficient (Gary's) model. The authors concluded that the conventional proportional hazard assumption was violated, and thus the relationship between diabetes and mortality is better described from the two extended models. I have the following comments.

Major comments

1. For all the estimated hazard ratios shown in Table 2 and 3, please provide corresponding confidence intervals. Also, for variables such as blood pressure, it is not clinically meaningful to express HR as per 1mmHg change.

2. For time-varying coefficient (Gray's) model, please provide the details of the time intervals. Are these results sensitive to the selection of the time intervals and the number of the intervals? How about using a cubic spline or other types of splines that allow a smooth curve of HR, instead of a linear spline as in Gray's model?

3. Was GFR collected in HEMO study? It would be better to adjust the result for GFR variables.

4. For the analysis of cause-specific mortality, was each cause-specific mortality outcome analyzed separately as all-cause mortality? If so, there could be an issue of competing risk.

Minor comments

1. Abstract, in the method section, it should be that “Cox-TVC that allows …”. Last paragraph of the discussion section, the sentence “with an increased risk after that point” is redundant.

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