Reviewer's report

Title: Diabetes related risk factors did not explain the increased risk for urinary incontinence among women with diabetes. The Norwegian HUNT/EPINCONT study

Version: 1 Date: 28 June 2009

Reviewer: Mary Townsend

Reviewer's report:

- Minor Essential Revisions

1. This is a very important study that thoroughly examines a variety of factors that may be related to UI risk in diabetes, a research area that certainly requires better understanding. The authors appropriately recognize that power was limited for some of their analyses. At the same time, given that so few studies have provided data on this important topic, the authors might actually consider being less conservative in their interpretation of some of the results, and give credence to qualitative as well as quantitative findings. For example, in the Discussion (p.8), the authors conclude that there was no association between HbA1c and UI. While it is true that none of the ORs for the different outcome definitions were significant, the OR for severe UI was 1.5 and the CI ranged from 0.9 to 2.5, indicating that their data are generally consistent with some potential association between HbA1c and UI. Similarly, the OR for urge UI was 1.8, with a fairly wide CI (CI 0.7-4.4), which does not rule out a possible association. In general, I believe it would be helpful to remind readers that the lack of significant relations may not reflect a lack of any relation (particularly for the UI type analyses).

2. Pg. 5: “A stepwise logistic regression analysis was performed on the women with diabetes. Age, BMI, parity, and smoking confounded the association between diabetes and UI…” Please clarify this procedure for readers. Currently, the text implies that the authors examined diabetes as an independent variable (although in a study population restricted to women with diabetes, this is not possible). I believe the authors probably meant to say “diabetes-related variables and UI”, rather than “diabetes and UI”.

3. Pg. 5: The authors state, “Analyses were performed separately for each of the different outcomes under investigation, continent women serving as reference group in all the analyses.” Then a few sentences later, “For severe UI, little-moderate/no UI was used as an alternative outcome.” If little-moderate/no UI was the reference group for severe UI, perhaps this should be noted immediately after the first sentence? Also, why did the authors choose to use a different reference group for this one outcome?

4. It is very helpful that the authors included data on the number of any UI cases within each exposure category in Table 1. If possible, adding the case numbers
for severe, stress, urge, and mixed UI to Tables 2 and 3 would be very useful for readers. However, if table size is an issue, perhaps the authors could mention the total number of cases for each case definition in the text.

5. In Figure 1, please report the number of women in each diabetes sub-group.

6. Discussion, paragraph 2: The authors mention that it is unlikely that their “results would have changed if more women with diabetes had participated in the study.” However, while a larger sample size might not improve the validity of their results, it could increase the power of the study (especially for the analyses of specific UI types) and improve the precision of their odds ratio estimates (i.e., narrower CIs). For example, the OR for the association between diet treatment and urge UI was 2.67, but the CI ranged from 0.9 to 8.3. This OR would likely be significant in a larger study. Thus, a larger study probably would have led to more statistically significant results.

7. Pg. 8: “In the present analysis the diabetic women with UI had significantly more angina than the non-diabetic women…” Should this read, “… more angina than the diabetic women without UI”?

8. Pg. 10: In the last sentence of the Discussion, the authors state that “no diabetes related risk factors in the present study seem to be able to explain the findings.” However, the authors did identify some significant factors related to UI risk in their study population. Consider revising this statement to reflect that some significant results were found. In addition, the title of the study might be revised, since it suggests that the authors found no significant associations between any diabetes factors and UI.

- Discretionary Revisions

1. Consider adding somewhere in the text or in Table 1 the ranges, or interquartile ranges, of the continuous variables (i.e., HbA1c, glucose, ACR, cholesterol, triglycerides). This may help readers understand whether there were many people in the study population with very abnormal values and, thus, whether non-significant ORs could be due to low variability in these exposures.

2. If women with type 1 diabetes are a small percentage of the study population, consider excluding them from the analyses so that the population is more homogeneous.

**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.