Reviewer’s report

Title: Genetic testing of newborns for type 1 diabetes susceptibility: A prospective cohort study on effects on maternal mental health

Version: 2 Date: 17 February 2010

Reviewer: Tuula Simell

Reviewer’s report:

Aas and collaborators have studied how information about increased genetic risk of a newborn child to develop type 1 diabetes (T1D) influences mother’s self-esteem, life satisfaction, anxiety, level of depressive features, and how serious mother’s concern of he child’s well-being is. The study combines data from the “Norwegian Mother and Child Cohort Study” (MoBa) and the Norwegian “Environmental Triggers of Type 1 Diabetes” study (MIDIA). The topic and the data are highly interesting. However, I suggest a number of revisions to the manuscript.

Discretionary Revisions:

1. Introduction and Discussion: Delivery of genetic information (counseling) differs markedly according to the disease which is in question (e.g., T1D, monogenic diseases, cancers etc.). Restrict the Introduction to T1D and leave the other diseases out, but discuss them in the Discussion part if you so like.
2. Table 1 and 2: Please show the two study groups separately.
3. Discussion, p.20, para 2, 3 last lines (In consequence…): This sentence may cause erroneous security, as clinical T1D may well develop within the 3-month intervals also to children who in the previous autoantibody testing has been aab negative. This has been firmly proven in the other large prevention studies. Later, when the follow-up intervals are 12 months, the risk that symptomatic T1D develops after an aab negative sample before next examination of course increases.
4. Discussion, last para before Conclusions, line 2: “Most people survive the onset of type 1 diabetes”. Modify, as deaths are luckily extremely rare in the Western world.

Minor Essential Revisions:

1. In the title of the manuscript and throughout the text the term “maternal mental health” has been used to describe mother’s self-esteem, life satisfaction, anxiety, level of depressive features, and how serious is mother’s concern of he child’s well-being. To me, mental health has a slightly different meaning, more on the “medical” side, whereas here it is used to describe selected features which often are signs of a healthy response. I suggest that the authors modify the title and use a proper expression also elsewhere in the text.
2. Background, p. 4, para 2, last line: …patient treatment is limited… Refers here to clinical T1D. Insulin is fairly specific medication for the clinical disease.

3. Background, p.5, para 1: A number of T1D susceptibility genes have been identified. A better expression in this context and elsewhere here is HLA-conferred susceptibility, as the predictive importance of the other genes is small.

4. Final conclusion: I would change the first sentence of the conclusion, as there is always need for concern!

Major Compulsory Revisions:

1. The paper’s main goal is to compare answers to selected and properly validated questionnaires of mothers who have received information of their child’s increased or non-increased genetic T1D risk. However, a large part of the text is written to study whether the study cohort represents normal Norwegian population. Furthermore, sociodemographic characteristics in Methods and in Results take up too much space from the main topic of the paper.

2. Child’s absolute risk of developing T1D is around 3% if the mother has T1D, but the risk is between 6% and 8 % when the father has T1D. Father’s T1D is likely to have an impact on the responses caused by the risk information. I suggest that these data, if available, are added, or at least fathers’ “role” is included in the Discussion.

3. The final data presented in this manuscript has been collected at child’s age of 6 months. If data are collected and blood samples are drawn at 3-month intervals, there has been a nurse’s visit with blood draws just recently, or there will be one very soon. This is an obvious reminder to the family of the child’s T1D risk. Was such a phenomenon seen at the 6-month visit?

4. It remains unclear how the nurses who obviously delivered the risk information to the families in different regions of Norway were trained and monitored. Were you able to see differences by region in recruitment efficacy and in follow-up responses to questionnaires and blood draw requests?

5. Please add information of the number of children who seroconverted to autoantibody positivity and/or clinical T1D, as seroconversion to positivity for multiple autoantibodies has a strong effect on the risk.

6. Regarding the selected genetic high-risk criteria: Pls describe what proportion of all T1D cases are picked up using the criteria of this study (sensitivity and specificity of the selected genotype).

7. Results section is a problem. Para 1 has little to do with the main topic of the paper; nation-wide representativeness is a sidetrack of the paper. Delete. Para 2: belongs mainly to methods. Fill up the space with the true key findings of the study. Modify the tables so that the two study groups are shown separately.

**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:

No to all of the above.