Reviewer's report

Title: Birth after preeclamptic pregnancies: association with allergic sensitization and allergic rhinoconjunctivitis in adolescence. A historically matched cohort study.

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Reviewer: Bernt Alm

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Re: Byberg et al., Birth after preeclamptic pregnancies: association with allergic sensitization and allergic rhinoconjunctivitis in adolescence. A historically matched cohort study.

This study of 617 adolescents aims at studying if maternal preeclampsia is associated with allergic sensitisation, allergic disease or altered lung function in adolescence. The authors conclude that preeclampsia was associated with allergic sensitisation and allergic rhinoconjunctivitis, but not with other atopic diseases.

The paper is well written in good English and interesting in the light of the hypothesis of early origins of disease. However, there are some points that I would like to see enlightened.

In the paper, the term “adolescence” is used of the study population. However, the follow-up ages were all below 13 years of age, while the definition of an adolescent is >13 years, according to MeSH.

On p. 5: The follow-up studies seem to be done at very strange ages, i.e. at 10.8 years for girls and 11.8 years for boys. A second follow-up at 12.8 years was also done. Why these ages? Are they means? If so, some measure of dispersion should be given.

P 7: The questionnaire is said to be “modified from the International Study of Asthma and Allergies in Childhood (ISAAC)”. Modified, how? It would be useful to give the exact wording of the questions asked.

On p 8, end of para 1, it is said, “…analyses, but the matching variables were adjusted for SPSS for Windows (version 18.0.0, Chicago, Ill., USA) was used for all analyses. …”. Something seems to be missing in this sentence.

P. 12: “We found no association with any atopic sensitization or disease if the mother had mild or moderate preeclampsia, only if the mother had severe preeclampsia. This suggests that an increasing severity of the maternal preeclampsia increases the risk of atopic disease in the child.”

What the authors say here is that there is no biological gradient, or
dose-response relationship. This is, according to the Hill criteria, rather speaking against a causal relationship than in favour of.

P. 20: Why did the age at FU1 differ between boys and girls?

On p 21, in table 1, Gosset’s t-test is mentioned, but not in the Methods. Although it is commendable to reveal the real name of the pseudonym "Student", I suspect that this will puzzle many readers. In any case, it should be stated in the Methods.

P 23, Table 3: It is not clear what the difference between model “a” and “b” is. On the whole, Table 3 is very cluttered and hard to read.

Why adjust for maternal asthma only and not for paternal or for family history of other allergic manifestations?

It would also be interesting to see which variables in the model were still significant after the stepwise procedure. Also, whether the variable maternal asthma had large influence on the point estimate.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I have no competing interests to declare.