Author’s response to reviews

Title: Cerebral disorders in the first 7 years of life in children born post-term: A cohort study

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Dear Sir

Thank you very much for the review and feedback of the paper: “Cerebral disorders in the first 7 years of life in children born post-term: A cohort study”. Below we have answered the questions and commented on the concerns raised by the reviewers.
Major concerns:

1. Why do the authors define 'post-term' as of 41 0/7 weeks gestation when the papers they refer to (e.g. 1 - 4) define post term as of 42 0/7 weeks? The results mentioned in the introduction are difficult to compare with the results in the study under these circumstances. See answer to next point.

2. The information on how many births occurred per gestational age week is missing. If the number of births at 41 weeks (41 0-6) was highest among the group between 41-44 weeks (as can be assumed due to the Gaussian distribution of births around the term of 39 - 40 weeks), it may explain why there is no difference between what the authors define as "term" and "post-term": the high number of infants at 41 weeks with adequate outcome may well compensate for adverse outcome thereafter. Evidence for this is given by the secondary outcome where infants born at 41 weeks have better outcome than infants born thereafter. Maybe the study would benefit from comparing 39 0/7 to 41 6/7 as full term with 42 0/7 to 44 6/7 as post term as in the other papers mentioned.

We agree that our initial definition can give some difficulties in comparing the results with other studies. Therefore we have followed the advice from the reviewer and have re-analyzed the data using the definition: term week 39+0 – week 41+6, and post-term as week 42+0 – week 44+6. All results have been changed accordingly. Furthermore, the discussion section has been changed according to the results of the re-analysis.

Minor issues:

3. Methods:

a. First sentence of methods (aim) should be last sentence in introduction.

The sentence has been moved to the introduction.
b. Study originally includes 90,191 pregnancies. How many pregnancies were there in total during this time period in Denmark? i.e. how representative is this sample of the target population?

The Danish National Birth Cohort (DNBC) is estimated to have recruited about 30% of the target population. About 50% of all GPs took part in the recruitment and 60% of those invited accepted the invitation. Ellen Aagaard Nohr has published a number of papers on selection into the cohort (e.g.: Does low participation in cohort studies induce bias? Nohr EA, Frydenberg M, Henriksen TB, Olsen J. Epidemiology. 2006 Jul;17(4):413-8. PMID:16755269.). We have chosen not to include this information in the manuscript but will of cause be happy to do so if wished by the editor.

4. Results:
   a. ORs in results are difficult to read. Suggest using (OR 1.33; 95%-CI: 1.00 to 1.77)

   We agree and have changed accordingly.

   b. Please define psychiatric caseness in method section.

   For data from the Danish National Patient Register we have changed to the correct term: psychiatric diagnoses.

   For data from the SDQ a detailed description has been included in the method section.

   c. Risk of febrile seizures (HR 1.60; 95%-CI: 1.09 to 2.33) is rendered differently in Table 3b: 95%-CI 0.09 to 2.33. Assume value in table is incorrect.

   Thank you. The table was incorrect. It has now been corrected.
5. Discussion:

a. 3rd par.: it is unclear to me which caesareans were excluded from study population. In the discussion the authors mention excluding elective caesareans before or at term but not after. What about acute c-sections before onset of labor? In the discussion the authors mention comparing infants born spontaneously at term with infants born post-term without specifying mode of delivery. In other words: all c-sections at term were seem to have been excluded but this is not stated as such in the methods section. What about post-term? If there are c-sections left over in the post-term group, they should be specified in table 1 as they may affect outcome.

All elective caesareans planned were excluded. Acute caesareans before the onset of labor were also excluded as now stated in the methodology. Only acute caesareans during labor were thus included – both at term and post-term. This has been specified in the method section.

b. How many pregnancies were induced at term and how many post-term? This information may have an impact on outcome and should be listed in table 1 and maybe discussed.

Unfortunately this information is not available.

We hope that you find the changes in the paper to be in accordance with your wishes and find the manuscript acceptable for publication in BMC Pediatrics.

Yours sincerely

Poul-Erik Kofoed