Reviewer’s report

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

Version: 0 Date: 21 Aug 2019

Reviewer: Mark Adams

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

State of the art retrospective cohort study, presumably population based, revealing no adverse outcome in post-term children when compared with term born children. However, there seems to be a difference in outcome between early and late post-term born infants. This study is important as it informs clinicians on the benefits or lack thereof in inducing birth prior to reaching post-term. The evaluation of the study is well performed, the manuscript very well written and the results clearly presented.

Nevertheless, there are some issues that I believe would benefit the manuscript.

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.

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.
Minor issues:

3. Methods:
   a. First sentence of methods (aim) should be last sentence in 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?

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

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.
   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.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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