Reviewer’s report

Title: Developmental outcomes of preterm infants with bronchopulmonary dysplasia-associated pulmonary hypertension at 18-24 months of corrected age

Version: 0 Date: 29 Oct 2018

Reviewer: Vasanth Kumar

Reviewer's report:

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The authors have done a good job at collecting data for this retrospective study of comparing infants with and without PH in infants with BPD. They have tried their best to get to a homogenous group of patients with ECHO diagnosis and infants with follow-up data. The study is conducted over nine years. The reviewer has the following comments to make the manuscript better.

Results -

Table 2 - Severity of BPD is strongly associated with poor neurodevelopmental outcomes. Table 2 demonstrates growth and developmental outcomes in PH versus no-PH group. PH group has predominantly infants with severe BPD (17/20); however, NO-PH group has majority of infants (38/61) with moderate BPD. Hence, the differences the author observed in Table 2 could be the reflective of BPD rather than PH. The authors should comment on this limitation in detail in the discussion. The results of Table 2 may not be valid in the context of differences in severity of BPD in the two groups. This could be the limitation as well.

Table 1. Infants in the PH group also had a somewhat higher incidence of NEC, chorioamnionitis, oligohydramnios with a statistically important difference in culture proven sepsis. All of the above factors may play a factor in adverse neurodevelopmental outcome in the PH group. This should be explained in the discussion section. Also this could be the limitation of the study. Severity of BPD noted above in Table 2 also applies to Table 1.

Table 3. I like Table.3. This is a homogeneous group of severe BPD with and without PH. In infants with severe BPD + PH, again these infants had somewhat higher incidence of oligohydramnios, surgery for NEC and duration for CV (not statistically significant). These
numbers are small to draw any reasonable conclusions. The language and motor outcomes are no longer different with a marginal difference in cognitive outcomes (Table 4) compared to Table 2. This should be stressed in the discussion section.

Table 3. The p value for cognitive outcome is 0.048 is barely significant. What is the statistics used? Is it ANOVA? Statistics need to be mentioned at the bottom of the table, with an asterisk on 0.048. The same should be done with other significant values.

Table 4. Growth and HC are similar at discharge between the two groups. However, body weight is significant between groups (0.05) at 18-24 months. This is barely significant. Mention the statistics used at the bottom of the table. HC is different between groups (0.02), however, Z-score is not different between groups (0.24) at 18-24 months. Can the authors comment on this discrepancy? Is the HC significant or not significant?

Discussion -

Limitations - This section need to be expanded - to include that BPD is a big factor in poor neurodevelopmental outcomes with other factors such as SGA, NEC, sepsis, oligohydramnios playing some role in adverse neuro-developmental outcomes. It is a small sample size to predict ND outcome for PH infants with BPD, as PH and BPD are correlated. Despite this we have made an effort to homogenize the groups as much as possible.

Discussion needs to be discussed in the context of the results obtained. The reviewer thinks that Table 1 and Table 2 results are the result of differences from severity of BPD and not from PH.

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.

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