Reviewer’s report

Title: Characterisation of sucking dynamics of breastfeeding preterm infants: a cross sectional study

Version: 0 Date: 04 May 2017

Reviewer: Jenny Ericson

Reviewer's report:

Thank you for the opportunity to review this manuscript on sucking dynamics of breastfeeding preterm infants. Which focuses on measuring and describe the sucking dynamics of the preterm breastfeeding infant. This is an important and interesting area, which needs to be investigated and the study have important clinical significance. I do however have some comments.

General comments:

If I understood it right, there were only six infants who did not use a nipple shield, most of the infants used a nipple shield. Then it is more a study about the measurement and description of sucking dynamics of breastfeeding preterm infants using nipple shields. Maybe the aim should be changed?

In the discussion there are many interesting possible effects and influencing factors discussed which should still be presented. However, I think the discussion would benefit of a tighter presentation, it is a bit tricky to get a hang of all the parts in the discussion. Help the reader with a red line thorough the discussion. It is very long and for example, effects of nipple shields on different measurements used in the study are now discussed several times in different paragraphs. Maybe it is better to discuss nipple shields effects on measurements in this study in one paragraph.

Title page

According to the author guidelines, the title should include the study design if appropriate.

Some abbreviations are missing on the title side, NEC, HMO, N-HSPJ, and IOD.
Background

Page 3 and 4. According to the author guidelines, the introduction should be named background and the method section should include the aim.

The background should introduce the reader to the subject, and I am missing a more detailed description of what is known on infant normal tongue movement, vacuums, pausing and sucking patterns etc. as that is the focus of the study.

Several of the references in the background are quite old and newer are available for example on infant and maternal health benefits see for example Victora et al. 2016, preterm infant development Vohr, 2017, NEC and HMO there are quite a lot of newer references.

Page 3 line 42-48 references are needed to support the paragraph.

Page 3 line 50 the reference 8, is that the right reference?

The sentence on page 4 starting on line 7 on milk volume differences make me a bit thoughtful and needs to be considered by the authors. The references do not take into account the timing of initiation of stimulation/pumping which has shown to be highly relevant for milk production, see Parker et al. 2015. Maybe you should consider to wright together the sentence above where you have mentioned the initiation of lactation.

Discussion

Page 14, paragraph about nipple shield use in preterm infants. I think the authors also needs to consider/discuss more about the risks and potential problems around breastfeeding using nipple shields. To my knowledge, it is not entirely clear that nipple shields are beneficial for breastfeeding preterm infants. In a study by Maastrup, 2014 nipple shields were associated with less exclusive breastfeeding at discharge from the neonatal unit. The study covered almost 1500 preterm infants.

Page 14 line 47-50. Could you see any similarity between the children who had relatively high or low vacuum e.g. birth week, age, more close to full sucks? You describe later in the discussion that you did not see any differences in vacuum strength depending on infant age or weight. I understand that eight infants had achieved a full breastfeed at some time, however, did any of the infants' breastfeed the full prescribed volume during the examination? That you did not find any differences between the infants in vacuum strength and milk intake could it be because the infants in your study were not "mature" enough to exclusively/fully breastfed at the breast. I am curious about to see what differ in vacuum strength between exclusively at breast-feeding and infants not quite there yet. However, you may not have that data in this study.
The discussion about sucking rates and single sucks on page 16 are interesting and clinically relevant. This also connects with the comment above, do an exclusively/fully at the breast feed preterm infants differ in sucking rate/less single sucks during a feed compared to infants in your study. It may be difficult to answer in your study but interesting for future research.

Tables and figures

Legend Figure 2. Was it six infants with or without nipple shields? I think the numbers are switched.

Figure 4. I think it would become clearer if the figure was marked with "infant a" and "infant b".

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.

Yes

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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Please indicate the quality of language in the manuscript:

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