Reviewer’s report

Title: Growth in VLBW Infants Fed Predominantly Fortified Maternal and Donor Human Milk Diets: A Prospective Cohort Study

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Reviewer: Deborah OConnor

Reviewer’s report:

The objectives of this paper were to study the in-hospital growth of very low birth weight infants in a facility with high human milk usage, including the use of donor human milk. The authors hypothesized that increasing human milk intake would be associated with slower but adequate growth and the growth would be slowest in infants fed fortified donor human milk.

Strengths of the study

• Very topical article that will be of interest to those caring for very low birth infants. As use of mothers’ own milk feeding and donor milk has risen in NICUs in North America, there has been considerable discussion about the disproportionate risk of poor growth among human milk fed infants. This article provides some of the first published data that I am aware of that systematically assesses these risks.

• Strong team of researchers. Group in Iowa has a long and distinguished track-record in neonatal nutrition and infant nutrition. This reviewer is most familiar with the work of Susan Carlson and Ekhard Ziegler but the team as a whole thinks carefully about issues of feeding and have been leaders in addressing issues of poor growth among this vulnerable group of infants

Major Compulsory Revisions

• The authors examine the z-scores at birth and then again at discharge. Lots can happen in terms of trajectory of growth in-between. Can it be assumed that the z-scores are lowest at discharge or were they lower at some point during the in-hospital course and improved somewhat by discharge? Some thoughtful discussion of this should be included in the paper.

• Authors should expand on limitations of the study to include the following if they can’t be included in the this submission: (1) no measure of linear growth included in these analyses and implications of this short-coming; (2) no measure of “actual” total milk volume/total caloric intake to achieve growth presented and implications of this short coming; (3) expand on why observational nature of study could be a limitation.

• Revise the overall conclusion to the paper so that the conclusions follow what the data from the study show.

• In terms of selection of the study sample versus other studies reviewed in the
paper, did these earlier studies also exclude infants that expired or were transferred? If different, implications?

• Add in a sentence or two describing pasteurized donor milk (ie. was it mature milk? From three donors, how pasteurized). This will allow individuals from other countries to be able interpret your work in the context of their environment—ie. using raw milk, single milk donor etc.

• Page 6 (end of Nutritional Intake and Growth Variables Section): Substantiate the statement, “Negative change in weight z score from birth to discharge represents growth failure less than the in-utero growth rate, whereas positive change represents a greater than the in-utero growth rate”. With a small deviations in z-score, the weight gain/kg can still be positive…would this still be considered “growth failure”?

Minor Essential Revisions

• Abstract: The sentence, “Protein supplementation beyond standard human milk fortifier was related to human milk intake” didn’t mean much to me until after I read the paper.

• Define maternal milk and human milk at the beginning of the paper—i.e. what is mothers’ own milk alone versus both mothers’ own milk and pasteurized donor milk.

• Third paragraph of the background, “A recent study…”. Cohort of infants followed 10 years ago.

• Page 7, was human milk fortifier added once infants were tolerating between 25 to 40 ml of milk per day or was this 25 to 40 ml/kg per day?

• Page 11 Discussion: please clarify type of human milk fortifier used in the Sullivan study (human human milk fortifier).

• Page 12 last paragraph: Comment on whether spot checking milk validly represents overall protein content of milk expressed. Provide citation.

• Provide a post-hoc power calculation for discharge weight z-score outcome in Table 2.

Discretionary Revision

• My understanding may be antiquated, but should you be starting a sentence with a numeral; shouldn’t numbers normally be written out?

• For the background statement, I would set up so it better defines the problem or issue and then follow this with an objectives statement.

• Clinical Variables. I would just say you collected supplemental oxygen at discharge and delete the end of the sentence….as a measure of chronic lung disease.

• Discussion page 10 2nd paragraph: Probably no need to use shortform NRN. Not used enough to warrant.

• Table 1: Footnote. Define day of life as Day zero.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests