Reviewer's report

Title: Iron absorption and oxidant stress during erythropoietin therapy in very low birth weight premature infants: a cohort study

Version: 1 Date: 14 April 2005

Reviewer: Barbara Finckh

Reviewer's report:

General

This paper addresses the interesting question about the effects of erythropoietin plus elevated iron intakes on antioxidant status and iron incorporation in very low birth weight premature infants. The hypotheses are that there will be an increase in oxidative stress during erythropoietin therapy and that iron absorption during erythropoietin therapy would be enhanced in those infants receiving human milk.

In a cohort of 10 premature infants the first hypothesis was tested by taking samples for the measurement of iron absorption and oxidative stress before erythropoietin treatment and 2 and 4 weeks thereafter. The second hypothesis was tested by comparing the values for iron incorporation between infants getting human milk (n=7) or formula (n=3) in the same cohort. The authors themselves stated that a comparison between the values of 3 and 7 infants is statistically not very relevant. Therefore in general this reviewer would propose the following: The data comparing the iron absorption and oxidative stress before and during erythropoietin therapy should be combined in one table and the differences between the feeding procedures should only be mentioned in the text.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

As mentioned in the section General this reviewer propose to combine Table 1 and Table 2. The data of the infants weight is mentioned as mean SD (please cheque the numbers) allready in the text for all three time points and could be excluded in the new table. Also the hemoglobin concentrations could be mentioned in the text. The mentioned mean values of incorporation in week 2 and week 4 should be recalculated (for example HM week 4: 8.6 4.9 instead of 7.9 3.8).

In the discussion the authors should be more speculative about the comparisons between the different feeding groups due to the above mentioned problem of very small numbers. In addition in the discussion the authors could mention the possibility that during the treatment with erythropoietin there is a substantial increase in iron consumption. This could also be one of the reasons that no increasing oxidative stress could be measured although large doses of iron are given.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Page 2, Abstract, line 8
What did you measure in feces; it is not mentioned in the paper?

Page 7, line 24
Abbreviation NIST not mentioned in the list of abbreviations

Page 12, last line
The correct nomination of TRAP: Total radical-trapping antioxidant parameter of plasma

Discretionary Revisions (which the author can choose to ignore)

Authors: Khalid Aziz, MB; probably means MD

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes

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