Reviewer’s report

Title: Maternal iodine status during lactation and infant weight and length in Henan Province, China

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Reviewer: Akhgar Ghassabian

Reviewer's report:

This is a cross-sectional study examining the relation between maternal and infant iodine status in a province in China with infants' anthropometric measures. The analyses showed that the population under study was iodine sufficient. However, in 747 mother-child pairs (who had exclusive breastfeeding in the first 6 months of infant's life) the authors showed that maternal urinary iodine concentration (UIC) <50 μg/L was associated with smaller anthropocentric indices. This is an area of research that needs further attention since few studies focus on the iodine status of lactating women and its importance for child health.

My comments:

Title: the study uses one single time point of anthropometric measures. So the use of the term "infant growth" can be misleading, because "growth" implies that longitudinal data of anthropometric measures were available in the study.

Abstract: Please indicate the study design (cross-sectional study). Also define the abbreviation used. It would be informative if the number of women and infants with UIC<50 μg/L is also listed. I suggest that the conclusion would be rephrased as the study did not actually measure "growth".

Introduction: Lines 75-78 discuss the limitation of previous studies, and provide the rationale for the present study. Please be more specific about each of the point brought up by using examples, e.g. what was the sample of the previous studies (small), or what was the potential confounder which was missed in the previous studies. Also, it would be worth mentioning if any trial has addressed the benefit of iodine supplementation in lactating women (and can be extensively reviewed in the discussion too).

Methods: UIC measures were not adjusted for the creatinine clearance. It should be mentioned as an important limitation of the study. Also, what was the rationale for adjustment for maternal iodine supplementation? Does it have a direct effect on infant anthropometric measures independent of maternal or child UIC? Another question is, why in the regression models, maternal and infant UIC were entered simultaneously?
One suggestion would be to examine the effect of maternal UIC in the group of children who had UIC within the normal range (excluding high infant UIC or infants with UIC <50 μg/l. If any association will be observed between maternal UIC and child anthropometric measures in this group, it will be an indication for the direct effect of maternal UIC on infant anthropometric measures.

Results: Line 145, additional to the group level measures, please provide what percentage had UIC within the range recommended by WHO.

Discussion: an important issue for recommendations on iodine intake is the safe range. A growing body of literature suggests the impact of low levels of iodine as well as high levels in pregnant and lactating women on child health. The authors are suggested to target this issue in their analyses and also comment on it in the discussion. Also, the lack of evidence in lactating women should be discussed further and the existing interventional studies with iodine supplementation in lactating women can be reviewed.

Line 205, I am not sure if this recommendation is in line with the findings. Despite the fact that UIC at the group level was within the WHO recommendation, there was a percentage of women who had UIC below the recommended levels and the children of these women had smaller anthropometric measures compared to the rest.

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.

No

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

Yes

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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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