Reviewer's report

Title: Breastfeeding and vitamin D supplementation reduce the risk of Kawasaki disease in a German population-based case-control study

Version: 0 Date: 09 Dec 2018

Reviewer: Andras Bratincsak

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The manuscript "Breastfeeding and vitamin D supplementation reduce the risk of Kawasaki disease in a German population-based case-control study" summarizes the comparison of patients with Kawasaki disease to well-matched control cases in regards to the protective effects of breast feeding and vitamin D supplementation.

Originality

The study is not as original as it is stated in the manuscript: In the first sentence of the Discussion, the authors state that "Our study is the first nationwide population-based cohort ...", which is not true, because there is a study from Japan, also referenced in this manuscript (ref 29), that evaluated the effect of breast feeding on the development of KD in more than 27000 children. In the last paragraph of the Introduction (Page 4, line 1), the authors state the effect of breast feeding is largely unknown, which is again not true. I recommend to change the beginning of the Discussion, and the end of the Introduction, and represent the novelty and originality of this study commensurate to the findings, maybe focusing on the effects of vitamin D supplementation, and discuss the findings as reinforcing the findings of a previous very large study from Japan.

Methodology

The methodology is well developed and well described. The method of case-control selection and the confirmation of appropriateness of the control group gives strength to the case-control study. I suggest to place the "Matching" paragraph (Page 8, lines 1-14) in the Methods section and not in the Results section.
Statistics

The statistics are exemplary, the description is clear, and the Tables are understandable.

Results and conclusions

The results are well described and tabulated.

The first figure is merely a summary of the KD diagnostic algorithm, should not need to be included in the manuscript. The second figure could be simply described in the text, but may help the reader, and figure 3 is visually pleasing, but not informative beyond the description of case-control matching in the text. There is no Figure 4 attached to the manuscript, but it is referenced (Page 8, line 2).

The conclusions are appropriate, but again, the novelty of the findings should be appropriately tailored, and previous works acknowledged.

Overall, this study is an interesting population-wide comparison of KD and control subjects, elucidating the beneficial effects of breast feeding and vitamin D supplementation. The results are partially novel, and accordingly, the manuscript should reflect that. The findings may be of value to clinicians as well as policy makers.

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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