Author’s response to reviews

Title: Early antibiotic exposure and development of asthma and allergic rhinitis in childhood

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In reply to Dr. Kiwako Yamamoto-Hanada, MD, PhD:

Thank you for your revisions and suggestions. The comments below have been addressed in the manuscript as follows:

"Correlated" should be replaced to "associated" in the abstract section and results section.

Response: correlated has been replaced with associated in the abstract and results sections accordingly.

Background

The authors focused on chronic diseases. Although allergic diseases may be included in the chronic diseases, it is unclear why the authors focused only allergic diseases. The authors had better mention about the background of allergic diseases.

Response: more emphasis and focus has been placed on atopy and asthma in the background section, and additional references have been made to support the role of the gut microbiota in the development of the immune system and future allergic diseases and asthma. Please see paragraph 2 of the Background section, page 1, lines 23-28.
The authors mentioned only OR. Does OR mean adjusted OR? I think the authors should show both OR and aOR, and add the explanations about the adjusted factors below the tables.

Response: adjusted odds ratio and odds ratio have both been added and distinguished between in the two tables, with explanations added in the table titles.

In the last paragraph, the authors mentioned "our data suggests that antibiotic exposure past the first year of life may still have a significant impact on the microbiota". However, the authors did not show the associations between the antibiotic exposure "in the first year of life" and allergic diseases in the study. The authors should revise the explanation.

Response: thank you for this distinction. The explanation has been revised to show the association between antibiotics and only asthma in the first year of life as found in our study, not on allergic diseases. Please see the conclusion section, paragraph 1, page 12, lines 3-7.

Editors Comments:

1) As you are accessing medical charts, please state whether ethical approval was sought and obtained for this study or whether permission was obtained from the medical center to access this data for research purposes and publication.

Response: The Loyola Institutional Review Board (IRB) approved our study and marked it exempt, as noted in the study design section of methods.

2) Under the heading “Ethics approval and consent to participate” in the Declarations, please include information on the consent to participate (our submission guidelines includes information on completing this section of the Declarations https://bmcpediatr.biomedcentral.com/submission-guidelines/preparing-your-manuscript/research-article#declarations).

Response: Loyola IRB approval was added to our Ethics approval and consent to participate in Declarations.