Reviewer’s report

Title: Association between exposure to traffic-related air pollution and pediatric allergic diseases based on modeled air pollution concentrations and traffic measures in Seoul, Korea: A comparative analysis

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Reviewer: Kangmo Ahn

Reviewer's report:

This study was aimed to investigate the relationship between pediatric allergic diseases and exposure to TRAP. The authors selected the study population appropriately according to their algorithm, and recruited a large number of children. Data were analyzed appropriately in the statistical models. However, they just found the association between eczema and TRAP, and did not show the causality. There are several issues to discuss about.

1. The authors stated that annual average concentrations of air pollutants were used. Please specify the dates to start and finish assessment of individual exposures. Was it from May 1, 2010 through Oct 31, 2010 or from Jan 1, 2010 through Dec 31, 2010?

2. This study appears to be based on the assumption that all children in the study population resided at the same area since birth. However, some of them may move into the current address within a year or two. In that situation, the annual average estimates of TRAP in 2010 do not represent the true exposure amount as they grow. Therefore, TRAP may not involve the development of atopic eczema but affect the persistence of eczema symptoms. I suggest adding a sentence to say that the relationship between TRAP exposure and AD development was not clear in the present study, especially in children aged over 5 years.

3. In this study, skin prick test was not conducted, and therefore the presence of sensitization to common allergens at individual levels was not elucidated. Although the exposure to allergens, inhalant or food, is more important risk factor than air pollutants in children with atopic eczema, this confounder was not adjusted. This is one more limitation that should be emphasized in the manuscript.

4. The present conclusion needs to be revised. This study simply provides one additional evidence that TRAP exposure is association with high prevalence of eczema, but does not prove either the causal relationship or biological mechanism. The last 2 sentences (As people tend to ~ children living in large cities) are not based on the present study results.

5. The authors should follow the styles of the Journal according to the instructions.

6. I would recommend to get assistance for English translation before publication.
Level of interest
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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