Reviewer's report

Title: Kawasaki disease and subsequent risk of allergic diseases: a population-based matched cohort study

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Reviewer: Jose Ricardo de Mello Brandao

Reviewer's report:

The article helps us to move a step further to understand the correlation between Kawasaki Disease and allergy. But, in my opinion, could be improved according to what follows.

Major compulsory revisions:

Methods
1) Clarify whether the index year for the ambulatory visits for the control group matched the year of hospitalization for their KD case. Therefore, state that controls were also chosen from 1997 to 2005 and, as KD patients, followed up to 2010 (if necessary). No new controls were picked up after 2005.
2) Clearly list the confounders. Are they the same presented in table 1? Were age and gender included in the model even though cases and controls were initially matched for these two variables? What the reason? For model adjustment?

Discussion and conclusion
3) Before stating that ‘The mechanism by which KD may increase the risk of future development of allergic disease remain unclear’ there should be some discussion on how the results do not preclude a common path to both diseases, even if allergy was developed after KD. To further bring more light into the issue, one would have to follow a cohort of newborns, for instance, and explore the different groups (controls without disease, allergic patients that further developed KD, KD patients that further developed allergies).
4) I don’t think I agree with the way the second and third limitations are described. The fact that some correlation between KD and allergy has previously been shown present us with the (theoretical) possibility that doctors are more inclined to ‘find’ allergic diseases in patients who had KD. So, not only misclassification of allergic diseases might not be non-differential but also combined to the fact that KD patients were seen more often by doctors, could make this population more susceptible to have allergies diagnosed. Particularly light cases. It is a limitation of the study that cannot be overcome with the data presented.

Minor essential revisions

Background
5) First paragraph - ‘These cross-sectional data suggest that patients with KD
tended to develop allergic diseases’ is imprecise. Cross-sectional data do not allow to cause-effect inference. Use correlation or a similar term.
6) Second paragraph – Exclude ‘a country with the third highest…’. It has already been stated in the previous paragraph.

Discussion and conclusion
7) Fifth paragraph – ‘However, the confounding effect of medical attention…’ should be excluded as it is a measured factor and therefore it is not related to the previous statement.

Table 2
8) b Instead of ‘matching variables’, describe them.

Not to be published

Abstract – Background
9) ‘Among the (exclude) Kawasaki…’

Background
10) ‘…involvement of CAL’ switch to ‘presence of CAL’

Methods – Potential confounders
11) ‘… proxy to measure of (exclude) children´s SES’

Results – First paragraph
12) ‘Table 1 presents … study subjects (include) and controls’

Discussion and conclusion – last phrase
13) ‘… allergic diseases compared with (include) the general population’

Table 1
14) ‘children´s enrollee’ (instead of enrolee)

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

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests