Reviewer’s report

Title: Plasma levels of alarmin HNPs 1-3 associate with lung dysfunction after cardiac surgery in children

Version: 1 Date: 15 May 2017

Reviewer: Matt Zinter

Reviewer’s report:

This is an interesting study with well-performed analyses and logical conclusions. Of most value are the repeated longitudinal measurements of multiple biomarkers. The explanation on the biological plausibility for the role of HNPs in the pathogenesis of disease is very strong. I have several minor questions/edits:

1) Was the PaO2/FiO2 ratio used in the study the worst value of all values in that day? Or the value closest to 8am? It's worth clarifying.

2) The multivariable regression models are very strong but there should be a table or supplemental table showing all the results (not just the final result for the HNP)

3) Line 92 -- should list as Acute Respiratory Distress Syndrome rather than Adult Respiratory Distress Syndrome

4) Line 96 -- the sentence that begins as "with advances in perioperative management" is very unclear. Please revise.

5) Line 350 -- the authors state "These data may indicate that HNPs 1-3 are mediators of lung injury in patients after cardiac surgery and not merely makers of disease." This is tempting to say but not true. The authors' data show a strong association between HNPs 1-3 and lung injury but there is no mechanistic work here to support the claim that they are mediators. The authors present ample data from OTHER studies supporting the hypothesis that they are mediators, and we agree it is definitely plausible that HNP 1-3 are mediators of post-CPB lung injury, but they can't say that their own work shows that.

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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