Reviewer’s report

Title: Association between Environmental Particulate Matter and Arterial Stiffness in Patients Undergoing Hemodialysis

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Reviewer: Szu-Yuan Li

Reviewer’s report:

The authors are obviously experienced in studying air pollution and surrogate outcomes among end-stage renal disease patients and published papers in this area. In the current project, they access the correlation of air pollution variables and PWV in patients undergoing hemodialysis and concluded air pollution parameter PM 10 is positively associated with baPWV measurement among dialysis patients. I have several concerns to this article, mainly on study design.

Major:

1. The author compared pulse wave velocity in their "hemodialysis patients" but used a reference data from "healthy people", they concluded 16 of their patients had normal baPWV and 111 patients had abnormal values. I think they used a wrong reference data because most end-stage renal disease patients have vascular calcification; these patients obviously have extremely stiff vessels and abnormally high baPWV measurements. Their data also showed gender, DM and hypotension all affect the bpPWV 10~20 times higher than PM 10 in this patient population (Table 4).

2. The authors correlated the air pollution level and baPWV measurements in hemodialysis patients from a single center. I assume these patients located near by the hospital and the air pollution level among each patient was similar. I suggest the authors collaborate with other centers and expend the patient number and more importantly, compare the baPWV results between patients live in area with heavy and less air pollution.

3. The author analyzed the association between a single baPWV measurement and a 365 day-mean air pollution level, I am not sure this is a correct method. Does the air pollution severity consistent in Taiwan through the whole year? Or the air pollution is more severe in some season than others, and therefor the baPWV measurement changes seasonally?

Minor:

1. If the authors decide to revised this article, they need to send it for English editing, there are many grammar errors and typos. The authors also used many abbreviations in this article for the readers. I suggest the authors clarifying what this abbreviation stands for before use them. (For example, "Al", "baPWV" in introduction,
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Unable to assess

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
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No

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I am able to assess the statistics

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

Not suitable for publication unless extensively edited

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