Reviewer’s report

Title: Pulse wave velocity and cardiac autonomic function in type 2 diabetes mellitus

Version: 0 Date: 07 Apr 2017

Reviewer: Michael Skilton

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This study seeks to determine the association of abnormal pulse wave velocity (PWV; >90th percentile from age-appropriate charts), as the gold-standard non-invasive measure of arterial stiffness, with cardiac autonomic dysfunction. Previous studies have detailed these associations, but with PWV as a continuous variable. As such, the findings of the current study are somewhat incremental, although are relevant from the perspective of identifying the putative mechanistic markers that co-exist with a high vascular risk phenotype in type 2 diabetes.

I have concerns regarding the statistical analysis, in particular the potential for false positives due to multiple analyses. Analyses of the same autonomic measures have been repeated using both parametric (log transformed) and non-parametric analyses, possibly increasing the likelihood of false positives due to multiple comparisons. In my opinion, it would be more appropriate to consistently apply one analytic approach.

Please don't use "CAD" as an acronym for cardiac autonomic dysfunction, given that it is commonly used for coronary artery disease, and thus may cause confusion readers.

The measures of autonomic activity are continuous, and not dichotomized into normal / dysfunctional. The language used should reflect that you are detailing cardiac autonomic function or activation, but not dysfunction itself.

The study is cross-sectional, and therefore unable to determine causality. Statements that indicate or infer causality should be tempered accordingly. For example, the rationale for the study is that "the effect of cardiac autonomic dysfunction on pulse wave velocity is not known"; yet the study design used does not inform on this question.

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.

No

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

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

Acceptable

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