Author’s response to reviews

Title: Peripheral Artery Disease and Exertional Leg Symptoms in Diabetes Patients in Ghana.

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Author’s response to reviews:

The Editor,

BMC Cardiovascular Disorders.

Dear Dr. Kim Smolderen

Re: Manuscript MS: BCAR-D-15-00086R2

Peripheral Artery Disease and Exertional Leg Symptoms in Diabetes Patients in Ghana.

We dearly appreciate the Editorials’ constructive comments and our responses have helped improve the quality and presentation of our manuscript. We have highlighted (yellow) in the revised manuscript the appropriate sections that the changes were applied.

Reviewer #1: While the authors were relatively responsive to the review comments and the paper has significantly improved, a few outstanding issues will still need further clarification.

* There is a hypothesis added — it is unclear, however, what the underlying reasoning or justification for that hypothesis is. I intuitively understand that PAD may be more prevalent among DM patients vs. non-DM patients, but the hypothesis with regards to the high levels of exertional leg symptoms is not clear to the reader.
RESPONSE: The authors have reframed the hypothesis as: ‘compared to non-diabetes individuals, DM patients will have higher prevalence of PAD, and there is no difference in symptomatic expression of PAD between diabetes and non-diabetes participants’ (Page 3, lines 80 – 83).

* The results of the analyses and the conclusion are confusing me. In the results section, there was a higher prevalence of intermittent claudication symptoms and rest pain among diabetes patients as compared with non-diabetic controls. The reverse situation shows up in the multivariable modeling with PAD (abnormal ABI) as an outcome?

I think part of that confusion stems from the fact that you describe the prevalence of exertional leg symptoms by DM status and don't discriminate between PAD vs. non-PAD status. Or at least, it is not highlighted as much. I think providing the descriptives with regards to the leg symptoms in DM vs. non-DM patients should be isolated to those with PAD only. Only in this way, the descriptive results will probably match with what has been found in the model. The way it is reported right now, is confusing. What was found in the model, does make more sense, I think, as non-DM patients are less sicker patients potentially more active, and therefore may be experiencing more exertional leg symptoms. Reasons for these findings need to be reflected on in the discussion. Right now, I think the reflections on these findings in the discussion on page 8 (2nd paragraph) are not profound enough and potentially also misleading.

It is not that intermittent claudication is predictive of PAD in non-diabetic individuals. I think you should see it more as PAD that expresses itself differently among non-DM patients vs. DM patients. One of the reasons that I suggested above (lower activity levels) may be an explanation, I think, but there may well be other reasons, such as diabetic neuropathy and loss of sensation?? I think it would be worthwhile exploring those options a bit better in literature to explain your findings.

RESPONSE: The authors have removed the prevalence of leg symptoms from Table 1. In addition, the authors have restructure Figures 2a & 2b to reflect the findings of the multivariable model in Table 3. Figures 2a&b now compare exertional leg symptoms of PAD vs non-PAD in diabetes and non-diabetes participants. These changes are reflected in the abstract, results (Page 6, lines 157 – 161) and discussion sections (Page 8, line 221 – 235).

* Recruitment of controls matches more the process of convenience sampling. This may introduce potential selection bias — can this be added to the limitation section?

RESPONSE: This has been added to the limitation section accordingly.

* The discussion should have a dedicated section towards the limitations of the study. Right now, that section is not as distinct as it should be. All the potential limitations that have
been brought up by the reviewers throughout the review cycles should be summarized and commented on in this paragraph, so that the reader can interpret the study taking these limitations into mind.

RESPONSE: A new sub-section has been dedicated to limitations of the study (Page 10, line 273 – 284).

Thank you.

Your Sincerely,

Dr. Kwame Yeboah

(On behalf of my co-authors)