Author’s response to reviews

Title: Shear stress improves the Endothelial Progenitor Cell function via the CXCR7/ERK pathway axis in the Coronary Artery Disease cases

Authors:
Hua Zhou (zhouhua1022@sina.com)
Qiang Tu (609538829@qq.com)
Yan Zhang (11259662@qq.com)
Hua Qiang Xie (xiehqiang@126.com)
Qing Yun Shuai (280540383@qq.com)
Xiao Chuan Huang (1633805294@qq.com)
Jie Fu (m15897856680@163.com)
Zheng Cao (caozheng908@163.com)

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Author’s response to reviews:

Dear Editor,

Thank you very much for your decision letter and advice on our manuscript (Manuscript #Shear Stress Improves the Endothelial Progenitor Cell Function via the CXCR7/ERK axis among the Coronary Artery Disease Cases) entitled “BCAR-D-20-00036R2”. We also thank the reviewers for the constructive and positive comments and suggestions. Accordingly, we have revised the manuscript. All amendments are highlighted in red in the revised manuscript. In addition, point-by-point responses to the comments are listed below this letter.

This revised manuscript has been edited and proofread by a native English speaker.

We hope that the revision is acceptable for the publication in your journal.

Look forward to hearing from you soon.
With best wishes,
Yours sincerely,
Cao zheng

Technical Comments:
Editor Comments:
The present paper aimed to explore endothelial progenitor cells function in coronary heart disease and the effect of shear stress up-regulated CXCR7/ERK pathway on EPCs function. Please clearly state your objectives in Background.

Response: Thank you for your comments. We revised it.

Methods and table should be included in the manuscript. So please reorganize your material!

Response: Thanks. We reorganized the materials.

Table 1 mentions additional investigations which were not mentioned in the manuscript, such as fasting plasma glucose, total cholesterol, creatinine.

Response: Thank you for your valuable comments. We added it in MS.

We operate a transparent peer review process for this journal where reviewer reports are published with the article but the reviewers are not named (unless they opt in to include their name).

Reviewer reports:
Reviewer 1: The paper deals with an interesting topic, but contains a lot of methodological flaws, which negatively impact on the content. All my concerns are summarized below.

Major points
- I would recommend authors to summarize general information on methods rather than refer readers to Supplementary material to read all this part, which is important to understand the paper. You may just summarize some essential elements and then discuss them in the Supplementary material, as you did.

Response: Thank you for your suggestions. We revised it.

- Methods. Why did you choose only male patients? This imbalances the cohort and influences the result. It looks like a major flaw, females must be included.

Reply: Thank you for your critical comments. We did not include female patients as following reseasons. Previous studies have shown that there are gender differences of adult circulatting EPCs between men and women. The number and activity of adult circulating EPCs are regulated by hormone/menstrual cycle[1,2]. Besides the number and function of EPCs from postmenopausal women are remarkably declined compared with that from perimenopausal women. We did not choose the females because the menstrual cycle, estrogen level have improtant effects on the function of EPCs, which will bring a huge impact on the results.
- Methods. Why did you exclude patients with hypertension, diabetes, cardiovascular events, or additional cardiovascular risk factors? It's not easy to understand as patients with CAD usually suffer from other CV diseases/CV risk factors, especially hypertension and diabetes. This is a major flaw not reflecting the reality of patients with CAD. Do you really believe that patients with CAD are otherwise healthy?

Reply: Thank you for your comments. It is well-established that hypertension and diabetes are important factors that affecting the function and activity of EPCs. Previous studies have shown that the number and function of EPCs are remarkably declined both in hypertension and diabetes patients[1-2]. In other words, hypertension and diabetes are independent determinants of EPCs capacities. Besides, not all the patients with CAD are associated with hypertension and diabetes. Therefore, in our current work, the subjects with hypertension, diabetes, cardiovascular events, or additional cardiovascular risk factors were exclude as all these conditions will influence the number or activity of EPCs. Our next work will focus on the effect of other factors to EPCs.


- Statistical analysis section is really vague and must be further discussed.

Response: we revised it.

Minor points
- Introduction may be a little summarized and limited to a single page, just providing the pertinent information for readers to understand the topic of the paper. Please consider to discuss the role of diabetes in determining endothelial dysfunction (see for example Eur Heart J. 2013 Aug;34(31):2436-43; Curr Pharm Des. 2019;25(29):3112-3127; World J Diabetes. 2015 Mar 15;6(2):326-32).

Response: Thank you for your suggestions. We revised it.

- English editing is absolutely needed.

Response: This revised manuscript has been edited and proofread by a native English speaker.

Reviewer 2: The manuscript needs minor english language editing (for example: "Date Supplement"). The statistical methods are not so clear to me. For example, did the authors perform any test to check the distribution of data before choosing a parametric test (t-test) for the comparisons? Please describe in detail the statistical methods.

Response: Thanks, we revised the MS accordingly.