Reviewer’s report

**Title:** CD133+ CELLS ARE ASSOCIATED WITH ADIPOCYTOKINES AND ENDOTHELIAL DYSFUNCTION IN HEMODIALYSIS PATIENTS

**Version:** 0 **Date:** 23 Mar 2017

**Reviewer:** Xiong-Zhong Ruan

**Reviewer’s report:**

The authors examined LVMI, CIMT and FMD of the brachial artery in 58 maintenance hemodialysis patients, counted CD133+ cells and measured adipocytokines (leptin, adiponectin, resistin, IL-6, TNF-α) levels in their blood samples. They found that CD133+ cell counts were associated with endothelial dysfunction in HD patients. CD133+ cell counts were positively related to serum leptin, resistin and TNF-α levels. We know that HD patients have increased risk of CVD and circulating progenitor cell are associated with CVD. But the role of circulating progenitor cells in HD patients' CVD is still not clear. This article proves that circulating progenitor cell (CD133+ cell) is important for CVD (endothelial dysfunction) in HD patients. In general, this study is innovative, practical and well designed.

**Comments:**

1) The author found that CD133+ cell counts were associated with endothelial dysfunction in HD patients with a correlation analysis. This article is mainly focused on the relationship between CD133+ cell, adipocytokines and CV parameters. What is the cause or consequence among CD133+ cells, endothelial dysfunction and adipocytokines? This should be clarified or discussed clearly.

2) The figure 4 shows that serum leptin levels is higher in high CD133+ group than in lower CD133+ group. How to define the 'high' or 'lower' levels of CD133+ cells in this study? The authors should provide the correlation analysis between leptin and CD133+ cells using similar approach as the figure 2.

3) The central hypothesis of this study needs to be clear. The authors show the correlation between serum resistin/leptin and TNF-α levels in figure 5,6. However, all these factors are adipocytokines/cytokine and the relationships between these adipocytokines should not be the focus of this study. The author should provide analysis/correlation between these adipocytokines and endothelial dysfunction which should be the main target of this study and should be emphasized.

4) The references in this article are too old. There are only four articles cited after 2010.

**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?
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The authors examined LVMI, CIMT and FMD of the brachial artery in 58 maintenance hemodialysis patients, counted CD133+ cells and measured adipocytokines (leptin, adiponectin, resistin, IL-6, TNF-α) levels in their blood samples. They found that CD133+ cell counts were associated with endothelial dysfunction in HD patients. CD133+ cell counts were positively related to serum leptin, resistin and TNF-α levels. We know that HD patients have increased risk of CVD and circulating progenitor cell are associated with CVD. But the role of circulating progenitor cells in HD patients’ CVD is still not clear. This article proves that circulating progenitor cell (CD133+ cell) is important for CVD (endothelial dysfunction) in HD patients. In general, this study is innovative, practical and well designed.

However, there are several points which should be addressed. The main problem is that the authors did many correlation analysis but the central hypothesis of this study is not very clear (see the comments to authors).

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