Reviewer's report

Title: Comparison of endothelial progenitor cell function in type 2 diabetes with good and poor glycemic control

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Reviewer: Jaw-Wen Chen

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In this paper, the authors indicated that they demonstrated EPC dysfunction in diabetic patients as the followings.

A. there was a reduced number of EPCs as determined by flow cytometry for the cells that co-expressed CD34 and VEGFR-2 when compared to healthy controls. The EPC number was inversely correlated with the concentration of FBS and HbA1C.

B. MNCs from diabetic patients took a longer period of time to form colonies with cobblestone appearance (EPC-like colonies) in culture than those from age-matched healthy controls.

C. there was a significant decrease in the number of viable EPCs, a defect in EPC proliferation and enhancement of apoptosis of EPCs based on in vitro study of hyperglycemic effect on cultured EPCs either from healthy controls or diabetic patients.

D. the EPC number in diabetic patients with good glycemic control was significantly higher than those with poor controls, however the level did not reach that in healthy controls.

There are some major comments as the followings.

1. This is a cross-sectional study. Accordingly, it is impossible to know the real factors that could make the increased EPCs number and proliferation in DM patients with better glucose control than in those patients with poor control. The other potential factors such as serum cytokines and the presence of risk factors should be also assessed. The discussion and conclusion should be also modified accordingly.

2. Please identify and discuss the unique findings of the study in addition to that of some recent papers.

3. In figure 2 (Characteristics of isolated EPCs from diabetic patients.), Please identify the age of these EPC cells from the DM patients. Please also specify the particular EPC cells in red color or in green color. Please also add the data from healthy control subjects for reference.

4. In figure 3, the data of cell numbers and proliferation came from EPCs cultured up to 21 days from both DM patients and control subjects. However, in figure 4, there were no data of apoptosis in EPCs cultured for 14 days from DM patients.
It was just mentioned that the EPC cells could not be cultured for more than 14 days for apoptosis study. Please clarify this critical issue and discuss why EPCs from DM patients could not be cultured for 14 days, if there were.

5. In figure 3, it seems that EPCs from DM patients may have less inhibition by high glucose than that from healthy controls. Please make statistic analysis to evaluate the potential difference.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'