Reviewer's report

Title: Stromal Vascular Fraction Transplantation as an Alternative Therapy for Ischemic Heart Failure: Anti-inflammatory Role

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Reviewer: Keiichi Tambara

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Minor Essential Revisions
1. It must be the authors’ duty and responsibility that they should discuss why SVF cells were more effective than BM-MNCs in the present study.
2. There are too many grammatical and syntax errors. Some of them were pointed out in Discretionary Revisions (concerning Abstract and Background of the text). Grammatical and syntax review by a native English speaker is vital for the paper. Also, in the description of measurement values, significant digits should be unified.

Discretionary Revisions
1. In Background, ‘using adipose-derived stromal vascular fraction (SVF)’ should be ‘using adipose-derived stromal vascular fraction (SVF) cells’.
2. In Background, ‘bone marrow mono nuclear cell (BM-MNC)’ should be ‘bone marrow mononuclear cells (BM-MNCs)’.
3. Also, in Background, ‘anti-inflammation role of engrafted SVF and BM-MNC post chronic myocardial infarction’ should be ‘the anti-inflammation role of engrafted SVF cells and BM-MNCs post myocardial infarction.
4. In Methods, ‘6x10⁶’ should be ‘6x10⁶’.
5. ‘Styrus red’ should be ‘Sirius red’.
6. In Methods, something about real time RT-PCR analyses should be described.
7. ‘Histology revealed highest vascular density, CD3+ and CD20+ cells in SVF transplanted group.’ should be ‘Histology revealed highest vascular density and CD3+ and CD20+ cells in SVF group.’
8. ‘SVF transplantation decreased myocardial mRNA expression of inflammatory cytokines TNF-#, IL-6, MMP-1, TIMP-1 and inhibited collagen deposition.’ should be ‘SVF transplantation decreased myocardial mRNA expression of inflammatory cytokines TNF-#, IL-6, MMP-1 and TIMP-1, and inhibited collagen deposition.’
9. ‘Anti-inflammation role for SVF and BM transplantation might partly benefit for the cardioprotective effect for chronic ischemic myocardium.’ should be ‘The anti-inflammation role of SVF and BM transplantation might partly benefit the cardioprotective effect for chronic ischemic myocardium.’
10. The sentence ‘Adipose tissue is derived from embryonic mesoderm and
contains a heterogeneous stromal cell population that can be easily harvested from the patients by a simple, minimally invasive method, and they can be easily cultured.’ should be ‘Adipose tissue is derived from embryonic mesoderm and contains a heterogeneous stromal cell population that can be easily harvested from patients by a simple and minimally invasive method, and those cells can be easily cultured.’ In addition, a new paragraph should start from the sentence.

11. The description ‘emerging as a better option to replace bone marrow for implantation into ischemic myocardium using easy and non-invasive procedures’ should be ‘has emerged as a better option using easy and non-invasive procedures to replace bone marrow for implantation into ischemic myocardium’

12. The phrase ‘underline mechanisms’ should be ‘underlying mechanisms’.

13. In Echocardiography (in Methods and Results), something should be mentioned about ejection fraction.

14. ‘Sirus red’ should be ‘Sirius red’.

15. ‘A high decrease in mRNA expression was noted in TNF# and IL-6 in the BM-MNC group rats compared with the control group, although these results did not reach statistical significance.’ This description was not adequate and should be deleted.

16. Also, the sentence ‘A high decrease in mRNA expression was noted in MMP-1 in the BM-MNC group rats compared with the control group, although these results did not reach statistical significance.’ should be deleted.

17. In Discussion, the authors wrote, ‘By the ability of the other subpopulations of SVF and BM’. However, against what was the phrase ‘the other’ written? That was not clear in the text.

18. In Discussion, the authors wrote, ‘the culture medium injection group showed deleterious effects on angiogenesis, probably, due to an increased amount of various unfavorable cytokines such as TNF# and IL-6’. However, did the culture medium itself increase the amount of unfavorable cytokines and induce the deleterious effects? Otherwise, it would be better to change the expression

19. In the last sentence of Discussion, the authors wrote, ‘It is obvious that the failed clinical trials [20,32] were carried out before we had sufficient understanding of how inflammation is involved and regulated following cell transplantation in heart disease.’ However, after this study, how should the authors or others modify the failed trials for success?

**Level of interest:** An article of importance in its field

**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.