Reviewer's report

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

Version: 1 Date: 23 January 2011

Reviewer: Espen Haugen

Reviewer's report:

Comments to the Author:
This paper focused on the angiogenic and anti-inflammatory property of bone marrow mononuclear cells (BM-MNC) and adipose derived stromal vascular fraction (SVF) and suggested SVF as an alternative cell source. Premaratne and colleagues compared the efficacy of intramyocardial implantation of SVF and BM-MNC in a rat model of chronic myocardial infarction. They showed that implantation of SVF and BM-MNC improved LV function and remodeling, compared with injection of culture medium (control). Further, increased vascular density, decreased infiltration of T and B cells, and decreased mRNA expression of TNF-a, IL-6, MMP-1, and TIMP-1 were observed in the SVF-implanted myocardium. The authors conclude that implantation of SVF and BM-MNC was effective in chronic myocardial ischemia through, at least in part, anti-inflammatory effects of these cells. Although there are several reports describing the beneficial effect of adipose-derived mesenchymal stem cells (MSC) and BM-MNC in similar models, this is an interesting preliminary study in which the authors tried to demonstrate their novel mechanisms. In addition, this is a very important area with substantial clinical implications.

Discretionary Revisions:
1. The culture medium was used as the control in this study (Methods, fifth paragraph). What is the culture medium? Just DMEM, or the medium cultured with SVF or BM-MNC? It is better to clarify.
2. Fig. 4: If possible the protein levels of TNF-a and IL-6 could be measured.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

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