Reviewer's report

Title: Local Erythropoietin and Endothelial Progenitor Cells Improve Regional Cardiac Function in Acute Myocardial Infarction

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Reviewer: Ioakim Spyridopoulos

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The paper "Local erythropoietin and endothelial progenitor cells improve regional cardiac function in acute myocardial infarction" by Stein and coworkers describes a rat animal model of acute myocardial infarction, where expanded CD34+ cells (supposedly EPCs) are used in conjunction with injected erythropoietin, enhancing vasculogenesis locally.

Major concerns:
1. methodology is far too superficial. Here some examples:
   a) PCR primers are not described (sequence, PCR condition, intron/exon localisation, bp product)
   b) CD34+ cell isolation. How was purity checked? Usually it requires 2 different antibodies raised to different epitopes in order to differentiate between the bead isolation and purity FACS
   c) EPCs were not characterised. Not all CD34+ cells are EPCs
   d) RT-qPCR results are not confirmed on protein level
2. The main goal of the study is to demonstrate a beneficial effect of cell therapy on LV function. Nevertheless, global LVF is not different between groups, only regional wall motion
3. Lack of mechanistic concept: There is no proof of mechanism or attempt other than random pick of regulated genes

Minor concerns:
Several orthograpic mistakes (abstractconclusion "with an increases", Methods: "Leukocytes suspensions..")

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: Yes, but I do not feel adequately qualified to assess the statistics.
Declaration of competing interests:

I declare that I have no competing interests