Reviewer's report

Title: Rationale and design of a prospective, randomised study of retrograde application of bone marrow aspirate concentrate (BMAC) through coronary sinus in patients with congestive heart failure of ischemic etiology (The RETRO study)

Version: 0 Date: 19 Feb 2018

Reviewer: Amit Patel

Reviewer's report:

This is well written manuscript from a group who has previously successfully used bone marrow based cell therapy in other clinical applications. The use of retrograde BMAC delivery has been previously described in the REVIVE Trial. However, that was a randomized open label trial in a similar group of patients. The authors describe a prospective blinded study with MRI end-points. The following questions need to be addressed:

1. Have there been statistics calculated for MRI drop out even if he patients are not a drop out to adequately power the trial?

2. Can KCCQ along with Minnesota Questionaire/NYHA class be added as a clinical end point as KCCQ has been validated and accepted for heart failure trials by the FDA?

3. What will be training required to adequately perform the procedures? This is very relevant as in the discussion the authors describe a low retention rate for retrograde. There are other groups which have found up to 30% retention at 24hrs in the heart.

4. Can patients with BiV-ICD be included in the trial due to the lead being in the coronary sinus?

5. Can a baseline holter be performed as there is only one other time in the trial and should have a reference to compare?

6. There are many other clinical trial which have use retrograde coronary sinus delivery but they have not been used in the introduction of discussion to demonstrate there potential benefits or shortfalls as related to this trial.
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.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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