Reviewer’s report

Title: Cardiovascular magnetic resonance feature tracking in small animals - a preliminary study on reproducibility and sample size calculation

Version: 0 Date: 08 May 2017

Reviewer: Alessandro Pingitore

Reviewer’s report:

This is a pilot study showing that Cardiac mechanics parameters derived from conventional cine images using CMR-FT technique in small animal models appear to be highly reproducible.

The great question when CMR is applied to mice is the high heart rate. This has important effects on temporal resolution, that, in turn, may make difficult to identify the end-systolic phase. The authors should enhance the discussion of this point in the discussion, limitation section.

The authors should state that these reproducible measurements have been done in mice with normal LV function. It is unknown the reproducibility in the case of LV regional and global LV dysfunction.

The authors should report in a table or in graphics the values of the measured variables.

Also the authors should report conventional CMR parameters: volumes, ejection fraction, stroke volume etc.

An important measure of LV mechanics is LV torsion. It could be interesting whether the authors show the results of this variable.

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.

No

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 recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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