Reviewer's report

Title: Single Beat 3D Echocardiography for the Assessment of Right Ventricular Dimension and Function after Endurance Exercise: Intraindividual Comparison with Magnetic Resonance Imaging

Version: 1 Date: 30 January 2012

Reviewer: Thomas Buck

Reviewer's report:

1. Is the question posed by the authors new and well defined?
   The subject is not really new and no clinical relevant or important hypothesis has been defined.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?
   The present study is a feasibility study and a study on accuracy. The methods are well described. Sufficient details to replicate the work are not provided.

3. Are the data sound and well controlled?
   Yes.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   Yes.

6. Do the title and abstract accurately convey what has been found?
   Yes.

7. Is the writing acceptable?
   Yes, but the style of writing is very technical and is lacking enthusiasm and convincibility.

- Major Compulsory Revisions

The present work is mainly a feasibility study and study and accuracy of using single-beat 3D echocardiography for measurement of RV volumes and function compared to CMR used for reference.
The feasibility and accuracy part of this study are well done, although the results and findings are not really new.

The study unfortunately is lacking an important and clinically relevant hypothesis. The authors studied healthy runner and found normal RV function after exercise which is not surprising.

The authors should discuss the limitation of using 3D surface reconstruction for 3D echo volumetry versus Simpson’s method for CMR which has been demonstrated to provide discrepant results by former studies.

The number of 13 authors is not appropriate and should be reduced to a maximum of 8.

- Minor Essential Revisions

Page 7, line 1: Please indicate the manufacturer’s name of SC2000 workplace (Siemens?)

In the Reference List the reference of JASE as ‘Official Publication of the ASE seems to be unusual and unnecessary.

In legend of Fig. 1 omit ‘Beutel’ as it was not further used and explained in the text.

Table 5 can be omitted as being of no relevance for this study.

The Bland-Altman plots in Fig. 4 have a difficult scaling of the x-axis. Scaling seems to be unequally distributed with the consequence of unequal distances between -2sd and 0 versus 2sd and 0 particularly in B, C, and D.

Level of interest: An article of limited interest

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'