Reviewer’s report

Title: Rotation and torsion of the left ventricle with cardiovascular magnetic resonance tagging: comparison of two analysis methods

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Lehmonen et al. report a comparison of two different CMR tagging software for analysis of the rotation and torsion of the left ventricle in patients with hypertrophic cardiomyopathy (HCM, n=14), HCM mutation carriers (n=10) and healthy controls (n=12).

Overall, end-systolic rotation and torsion values obtained were very highly correlated between the two software (p<0.0001). Absolute values obtained from analysis in each software were different. Specifically, rotation and torsion values were consistently higher in Segment compared to HPF. The authors conclude that there is a need for software-specific reference values when performing similar analysis.

The manuscript is interesting, the methods are straightforward and the results clearly presented. Comparison of measurement techniques is unfortunately seldom done in the literature, but increasingly useful as quantitative methods gain momentum in the CMR field and awareness of their limitations is important.

I have the following remarks/suggestions to make:

Comments:

Major:

1. Small sample size is a major limitation of the study and should be addressed in a limitations section before the conclusions.

2. Data (esp rotation and torsion values) are probably not normally distributed so the choice of Kruskal Wallis test is appropriate. However, in the same manner, correlations should be calculated according to Spearman and not Pearson as noted.

3. What are the equations (Y = a + bX) of the linear regressions depicted in Figure 4 of the manuscript? Even with a small sample size, knowing the slope and coefficient of the equation could prove useful for future work or when comparing values between the two software.

Minor:

* Define abbreviations in abstract, e.g. HPF
The manuscript reads contains several grammatical errors. It should be thoroughly revised by a native English speaker.

Is this the first study comparing CMR rotation/torsion data between the HPF and Segment software? If no, results should be compared to previous studies; if yes it should be stated in the discussion for the readers to know.

Do the authors have some more demographics to show in Table 1? Also, was global longitudinal strain (GLS-LV) also measured in the population?

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

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

Needs some language corrections before being published

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