Reviewer's report

Title: Gated myocardial perfusion SPECT underestimates left ventricular volumes and shows high variability compared to cardiac magnetic resonance imaging - a comparison of four different commercial automated software packages

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Reviewer: Peter Gjertsson

Reviewer's report:

The authors have studied the differences in left ventricular volumes, ejection fraction and stroke volumes between MRI and gated myocardial SPECT as well as the differences between different myocardial SPECT programs (QGS, ECTb, GE MyoMetrix and Exini Heart). The manuscript is well written and easy to follow. The statistical methods used are adequate, and the conclusion that it is important to use the same MPS program when analysing sequential studies is supported by the findings.

I have however some minor comments:

1) In figure 3 plots are shown with either MR values or MPS values on the horizontal axis. It is not stated if the MPS values are mean values of all programs or values from one program. This should be clarified.

2) Table 4: Here the findings using either filtered back projection or iterative reconstruction are shown with mean values and standard deviation. The comparison is done in only twelve patients and on page 5 it is stated that the patients were randomly selected for this comparison. How many patients with large volumes and low ejection fractions are included in this small population? The range of volumes and ejection fractions should be presented.

3) Page 12: It is stated a MPS ejection fraction of 50% could correspond to a MRI Ejection fraction between 35 and 65%, it should be clarified that this is for an individual patient.

Level of interest: An article of importance in its field

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