Reviewer's report

Title: High-resolution grey scale or angio mode power modulation? Head to head comparisons of two modalities of real-time perfusion adenosine stress echocardiography with simultaneous SPECT

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Reviewer: Rosa Sicari

Reviewer's report:

This is a well written manuscript comparing the agreement of 2 contrast echo methods with SPECT. The methodology is appropriate and the results are sound. However, there are a few issues that authors should address.

1. Title: The title is too long and should be shortened

2. Background: In the first paragraph authors state that exercise ECG is commonly used but has a low accuracy in low pre-test probability patients. This is somewhat confusing since low pre-test probability is the not the main indication for imaging techniques. Please change and state that in case of non-diagnostic exercise ECG, non-invasive imaging techniques are more accurate as indicated by stable angina guidelines (Fox et al, Eur Heart J 2003)

3. Although this is an agreement study, authors try to assess the overall diagnostic accuracy of the combined evaluation of wall motion and perfusion abnormalities. This is the appropriate way to analyze stress echocardiography but still the results should be reanalyzed showing the additive value of perfusion over wall motion, if any. A) authors used a suboptimal stressor such as adenosine for the assessment of wall motion abnormalities. Please address; b) although perfusion defects appear earlier in the ischemic cascade they are unable to distinguish between macro-vascular and micro-vascular disease, whereas wall motion abnormalities are more specific of true ischemia. This is a major limitation of all perfusion techniques and wall motion analysis may overcome this limitation. Please discuss.

4. In line with the previous comment the use of wall motion analysis as a back-up to perfusion is questionable.

5. All the accuracy results should be displayed in graph format

6. In the study limitations section of the manuscript please acknowledge the fact that this is an agreement study but not an accuracy study due to the lack of results on coronary angiography. It is not surprising that contrast and SPECT should exert the same diagnostic accuracy. Please address.

7. Authors address the safety issue of contrast in an appropriate way. However, costs and the real additive value has not been demonstrated

8. In the discussion section authors provide a very balanced view on contrast use, however it would be important to have their opinion on the clinical
implications of these results.
9. Due to the nature of the journal it would be important to upload moving images (clips), since there is no space limit.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
'I declare that I have no competing interests'