Reviewer’s report

Title: The value of left ventricular strain-volume loops in predicting response to cardiac resynchronization therapy

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Reviewer: Quirino Ciampi

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Aim of the study was to investigate the value of LV strain-volume loops in predicting response to cardiac resynchronization therapy.

The authors studied 40 heart failure patients scheduled for cardiac resynchronization therapy.

The authors concluded that analysis of strain-volume loops could provide unique information for predicting response to CRT. Assessment of septal myocardial wasted work at baseline is helpful to improve patient selection for CRT.

The study is interesting.

There are some criticisms:

1. The study population is too small (only 40 HF patients). The authors should add the etiology of HF (ischemic vs non ischemic HF)

2. The LBBB morphology was present in 29/40 (72%) of the patients. The authors should indicate the others morphology. Did the authors include patients with Pace-Maker? QRS morphology may have a role because of electrical dyssynchrony may influence R²-S/D coupling of MidSeptal PS-Global volume loop

3. In the table 5 the authors should add the traditional predictors of response to CRT, i.e. QRS duration, LVEF, NYHA class.

4. In the Methods section (line 55) the authors reported that HF patients scheduled for cardiac resynchronization therapy were symptomatic, in NYHA functional class III or IV despite optimal medical treatment. However the percentage of therapy used, as reported in the table 1, is sub-optimal: ACEI/ARBs 22 pts (55%), Beta-blockers 19 pts (47%) Diuretics and/or spironolactone 19 pts (47%).

5. The authors should add an example of three-dimensional speckle-tracking imaging of responder and nonreponder before CRT and 6-months after CRT.
6. The authors should report the inter- and intra-observer variability of all three-dimensional speckle-tracking imaging measures and the time of off-line analysis.

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Please indicate how interesting you found the manuscript:

- An article of limited interest

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

- Acceptable

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