Reviewer’s report

Title: Layer-specific speckle tracking analysis of left ventricular systolic function and synchrony in maintenance hemodialysis patients

Version: 1 Date: 09 Dec 2019

Reviewer: Jae-Hyeong Park

Reviewer's report:

The authors showed decreased strain values in the ESRD patients with maintenance hemodialysis (MHD) with layer-specific strains compared with controls. I have several concerns about this study.

1. The fundamental question is why we should measure layer-specific strain (LST) instead of using standard strains. The authors showed decreased strain values. What is the additional diagnostic value in using LST over the conventional strain?

2. LV strain values can be affected by preload and afterload (Voigt JU, et al. J Am Coll Cardiol Imag 2019;12:1849-63). In ESRD patients with MHD, preload can be changed from increased venous return as the result of arteriovenous fistulae. Also, increased total body water and toxic materials from decreased urinary excretion and altered cardiac geometry by increased afterload can affect the LV strain values. Thus, patients with MHD may have decreased strain values. However, the authors only showed the decreased strain values in these patients compared with controls. What is the meaning of decreased strain values in these patients? Do they have a higher mortality rate or increased clinical events?

3. Because of the EchoPAC PC software set mid-myocardial strain value same as the global strain value including 3 layers. Thus, in table 3, the values should be rechecked.

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.

No

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I am able to assess the statistics

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