Reviewer’s report

Title: Associations of 2D speckle tracking echocardiography-based right heart deformation parameters and invasively assessed hemodynamic measurements in patients with pulmonary hypertension

Version: 0 Date: 15 Mar 2020

Reviewer: Tomasz Kukulski

Reviewer's report:

This is an interesting original descriptive work related to noninvasive assessment of atrial and ventricular deformation in patients with invasively determined post-capillary PH. You have demonstrated at least moderate association between atrial/ventricular strains and PCWP/mPAP at the same time indicating that correlation results could be underestimated. What could be a potential source of underestimation? This issue needs to be explained and discussed. In theory, RA /RV myocardial strain should reflect the mechanical adaptation of right chambers to chronic pulmonary pressure overload. There are several adaptive mechanisms that are launched in this chronic process of post-capillary PH: geometry and shape change, myocardial wall hypertrophy, myocardial contractility. All these variables have an impact on myocardial strain measurements. Thus, I would not expect very strong relationship with pulmonary pressure components. Strain will probably never become a marker of elevated pulmonary pressure.

It would be worth adding also data on RV stroke volume / RVOT TVI, RV diastolic function to see the relationship with RA/RV strain and PCWP/mPAP

Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

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

Needs some language corrections before being published

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