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LETTER TO THE EDITOR

# The added value of right ventricular longitudinal strain in patients with chronic thromboembolic pulmonary hypertension

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We read the article "The value of speckle-tracking echocardiography in identifying right heart dysfunction in patients with chronic thromboembolic pulmonary hypertension" by Li et al. [1], published in Int J Cardiovasc Imaging (2018) and wish to commend the authors on performing this valuable study on this rare, but severe disease. The research aims to assess the role of the new speckle-tracking echocardiography technique in detecting right ventricular failure (RVF) in these patients, however some questions arise as a result.

Firstly, the authors use symptoms and signs as evidence of the presence of RVF, which could be influenced by the treatment applied, which is not mentioned in the paper. This criterion overlooks subclinical RVF or compensated RVF patients, does not reflect the physiopathological changes in right ventricular mechanics and can alter the results of the analysis.

Echocardiography is the mainstay investigation for assessing disease progression, thus, the comparison of measurements of right ventricular function between the two groups of patients with moderate and severe disease is very useful. In this sense, systolic pulmonary artery pressure (sPAP), as estimated by echocardiography, showed no difference between the two groups (79.39 vs. 84.88 mmHg) and was of no use in differentiating between these patients, as opposed to speckle-tracking strain measurements, which showed significant differences in this comparison, both with segmental longitudinal strain and global free wall longitudinal strain (16.53 vs. 11.33%). This highlights the added value of using global longitudinal strain (GLS) in addition to classical measurements, also emphasized by the fact that GLS did not correlate well, or at all, with sPAP, right ventricular diameter or thickness or right atrial area in the chronic thromboembolic pulmonary hypertension patients (CTEPH). However, the authors did not present a correlation of GLS with tricuspid annular plane systolic excursion (TAPSE), a simple parameter that showed a good prognostic value for RVF in the ROC analysis, a correlation that if low or absent, could show an even greater added value of using strain in the evaluation of these patients.

Research on this rare disease using novel techniques is very important and can better our evaluation of CTEPH patients and thus, studies like these are essential for improving management of these patients.

**Author contributions** The authors declare that they have both participated in the design and execution of the paper, and that they have approved the final version.

## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

## Reference

1. Li AL, Zhai ZG, Zhai YN et al (2018) The value of speckle-tracking echocardiography in identifying right heart dysfunction in patients with chronic thromboembolic pulmonary hypertension. Int J Cardiovasc Imaging. https://doi.org/10.1007/s10554-018-1423-0

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