



Letter to the Editor

Echocardiographic variables with prognostic value in pulmonary arterial hypertension[☆]

Michael Dandel^{*}

DZHK (German Centre for Cardiovascular Research), partner site Berlin, Germany

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We read with interest the article by McCabe et al. in the IJC [1]. The authors demonstrated that a prolonged right ventricular (RV) systolic to diastolic duration (SD) ratio, which indicates RV dysfunction, carries significant prognostic value in idiopathic pulmonary arterial hypertension (PAH).

Because pressure overload-induced RV failure (RVF) is the main cause of death in PAH, timely prediction of terminal RVF helps optimizing the timing for transplant listing and can therefore be decisive for patient survival [2]. Echocardiography is a major tool for monitoring RV morphology and function and several echo-variables appeared useful for PAH surveillance. However, as shown by McCabe and other groups, even well-established functional parameters like RV fractional area change (FAC_{RV}) and free wall strain (RVFWS), as well as TAPSE, TAPSE/pulmonary arterial systolic pressure (TAPSE/PASP) and RVFWS/PASP cannot predict transplant-free survival with PAH [1–4]. This is explainable by the impact of RV dilation-induced tricuspid regurgitation (TR) which induces overestimation of RV pump function by facilitating RV systolic wall motion and myocardial deformation, because TAPSE, FAC_{RV} and RVFWS will increase correspondingly to the increased blood volume leaving the RV during systole [5]. It would be interesting to know whether the predictive value of SD-ratio was less affected by TR

changes. This would be an important advantage of the SD-ratio. McCabe et al. did not mention the positive and negative predictive value of the SD-ratio. However, this would allow its comparison with other useful echo-derived parameter combinations like RV load-corrected peak global systolic longitudinal strain rate or RV load adaptation index [2].

References

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[☆] Letter to the Editor regarding the article “Right ventricular systolic to diastolic duration ratio: A novel predictor of outcome in adult idiopathic pulmonary arterial hypertension.” by McCabe C, Vranesic II, Verdes MC et al. *Int J Cardiol.* 2019 May 8. pii: S0167-5273 (19)31137-4. doi:10.1016/j.ijcard.2019.05.019. [Epub ahead of print]

^{*} German Centre for Cardiovascular Research (DZHK), 13347 Berlin, Germany.

E-mail address: mdandel@aol.com.