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Letter to the Editor

Reply to "a pediatric perspective on the TAPSE/PASP ratio in pulmonary arterial hypertension"

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To the editor,

Many thanks to Koestenberger and co-workers for their correspondence emphasizing the pediatric perspective on the tricuspid annular plane systolic excursion/pulmonary arterial systolic pressure (TAPSE/PASP) ratio, an echocardiographic surrogate for right ventricular (RV)-pulmonary arterial (PA) coupling in patients with pulmonary arterial hypertension (PAH) [1]. We agree that adult TAPSE/PASP values should not be adopted as reference values for the pediatric age group [2], as acquisition might be challenging and development-dependent. To overcome some of these limitations, the TAPSE/pulmonary artery acceleration time ratio was introduced as a possible substitute for TAPSE/PASP in children [3]. In addition, RV fractional area change to invasive mean pulmonary artery pressure [4] and the ratio of RV area change to RV end-systolic area [5] were described in adult PAH as promising non-invasive surrogates of RV-PA coupling. However, caution should be exercised when using echocardiographic parameters as surrogates, because they have not yet been validated against invasive pressure-volume loop-derived measurements of RV-PA coupling. The inverse relationship of TAPSE/PASP with pulmonary vascular resistance and its strong association with PA capacitance (stroke volume/pulse pressure) in patients with PAH [1] could suggest that TAPSE/PASP predominately reflects afterload. TAPSE is an indirect measure of RV longitudinal shortening and consequently RV volume change, and PASP is associated with pulse pressure, which might explain the strong association of TAPSE/PASP with PA capacitance as well as the prognostic capacity of TAPSE/PASP.

In summary, knowledge gaps remain, and we further encourage Koestenberger and co-workers to explore echocardiographic parameters as surrogates for RV-PA coupling in children.

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Conflict of interest

The authors report no relationships that could be construed as a conflict of interest.

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