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A comprehensive echocardiographic method for risk stratification in pulmonary arterial hypertension

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The proposed comprehensive echocardiographic approach reflecting both RV pump function and systemic venous congestion is highly effective in risk stratification of PAH patients, outperforming the prognostic parameters suggested by current guidelines https://bit.ly/3fDiaUl

Cite this article as: Ghio S, Mercurio V, Fortuni F, *et al*. A comprehensive echocardiographic method for risk stratification in pulmonary arterial hypertension. *Eur Respir J* 2020; 56: 2000513 [https://doi.org/10.1183/13993003.00513-2020].

ABSTRACT

Question addressed: Echocardiography is not currently considered as providing sufficient prognostic information to serve as an integral part of treatment goals in pulmonary arterial hypertension (PAH). We tested the hypothesis that incorporation of multiple parameters reflecting right heart function would improve the prognostic value of this imaging modality.

Methods and main results: We pooled individual patient data from a total of 517 patients (mean age 52±15 years, 64.8% females) included in seven observational studies conducted at five European and United States academic centres. Patients were subdivided into three groups representing progressive degrees of right ventricular dysfunction based on a combination of echocardiographic measurements, as follows. Group 1 (low risk): normal tricuspid annular plane systolic excursion (TAPSE) and nonsignificant tricuspid regurgitation (TR) (n=129); group 2 (intermediate risk): normal TAPSE and significant TR or impaired TAPSE and nondilated inferior vena cava (IVC) (n=256); group 3 (high risk): impaired TAPSE and dilated IVC (n=132). The 5-year cumulative survival rate was 82% in group 1, 63% in group 2 and 43% in group 3. Low-risk patients had better survival rates than intermediate-risk patients (log-rank Chi-squared 12.25; p<0.001) and intermediate-risk patients had better survival rates than high-risk patients (log-rank Chi-squared 26.25; p<0.001). Inclusion of other parameters such as right atrial area and pericardial effusion did not provide added prognostic value.

Answer to the question: The proposed echocardiographic approach integrating the evaluation of TAPSE,

TR grade and IVC is effective in stratifying the risk for all-cause mortality in PAH patients, outperforming the prognostic parameters suggested by current guidelines.