# Letter to the Editor

## What is Optimal Definition of Right Ventricular Dysfunction and Right Ventricular Failure?

**To the Editor:**

Despite improvement in survival rates in patients with advanced heart failure following left ventricular assist device (LVAD) implantation, right ventricular failure (RVF) remains one of the unsolved issues even in the era of HeartMate 3.[1] Prediction and risk-stratification of post-LVAD RVF is therefore of utmost importance. Peters et al[2] compared the utility of previously proposed RVF predictive models to investigate an optimal risk model.

One of the reasons that post-LVAD RVF is challenging is the lack of an agreed upon definition. The definition of early RVF used by Peters et al[2] is well known and used in many studies: 1) unplanned need for right ventricular assist device, 2) the use of inotropes for >14 days, or 3) inhaled pulmonary vasodilator for >48 hours. Need for right ventricular assist device provides the clearest definition of early RVF, whereas the other two criteria may encompass other processes including pulmonary hypertension, sepsis, and device malfunction. Furthermore, these criteria are subjective and depend on clinician judgement. Did the authors consider including more objective criteria, such as elevation of central venous pressure, to define RVF?

Assessment of right ventricular dysfunction (RVD) is another challenge. The authors qualified the severity of preoperative RVD by echocardiography into none, mild, moderate, and severe.[2] Could the authors outline the methodology in determining severity for the purpose of reproducibility at other institutions? Did the authors consider using more quantitative echocardiographic parameters such as tricuspid annular plane systolic excursion? To maintain objectivity and exclude bias, was the assessment of preoperative echocardiographic RVD performed prospectively by outcome-blinded reviewers? I congratulate their findings, and look forward to validation in multicenter, large-scale populations.

Teruhiko Imamura, MD, PhD
*From the Division of Cardiology, University of Chicago Medical Center, Chicago, Illinois*
*E-mail address:* te.imamu@gmail.com

## References

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