

Multimodality Imaging for the Evaluation of Right Ventricular Function

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Right ventricular (RV) size and function have been found to be important predictors of cardiovascular morbidity and mortality in patients with various conditions. However, non-invasive assessment of the RV is a challenging task due to its complex anatomy and location in the chest. Although cardiac magnetic resonance (CMR) is considered a “gold standard” for RV assessment, the development of novel echocardiography techniques, including three-dimensional (3DE) and two-dimensional speckle-tracking echocardiography (2DSTE) opened new exciting opportunities in RV imaging. 3DE has proven accurate in measuring RV volumes and ejection fraction when compared with CMR while 2DSTE plays a critical role in measuring RV myocardial deformation, which is a powerful predictor of patients’ functional capacity and survival. Cardiac computed tomography provides an accurate and reproducible assessment of the RV volumes and can be considered a reliable alternative for patients who are not suitable for either echocardiography or CMR.

The presentation will summarize currently available data on the role of the different noninvasive cardiac imaging modalities in assessment of RV size, function and mechanics, with an emphasis on the benefits of novel imaging techniques and on how the latter can be applied in the various clinical settings.