LETTERS TO THE EDITOR

Early impairment of systolic right ventricular function parameters in patients with primary systemic amyloidosis

To the Editor,

I read with great interest the article ‘Comparison of right ventricular longitudinal strain imaging, tricuspid annular plane systolic excursion, and cardiac biomarkers for early diagnosis of cardiac involvement and risk stratification in primary systemic (AL) amyloidosis: a 5-year cohort study’ by Bellavia et al. In my opinion, this is an excellent article describing the current need for a more detailed investigation of the right ventricle (RV). The authors clearly state that there is a need for a detailed evaluation of RV function parameters such as tricuspid annular plane systolic excursion (TAPSE) and tricuspid annular peak systolic velocity (S') in a population suffering from AL amyloidosis. They found that TAPSE and S' were significantly lower in the patient group with AL amyloidosis than in the control group. They also found that Doppler myocardial imaging parameters can identify early impairment of cardiac function in those patients. For the convenience of the audience of the European Heart Journal – Cardiovascular Imaging and especially for centres performing detailed echocardiographic investigations of the RV, I want to add that recently our group has found decreased TAPSE and S' values in patients with congenital heart diseases that affect the RV. Similar findings of abnormal RV TAPSE and S' have also recently been reported in other chronic diseases such as systemic sclerosis or mild cystic fibrosis, which raises the question of the affect of chronic illness and possible inflammation on the RV regardless of the underlying disease state. In our opinion, it would be very interesting to investigate this AL amyloidosis patient group in a longitudinal follow-up study for the point of time at which the TAPSE and S' values will fall below the – 2 SD of normal values, as the systolic RV function may progressively deteriorate over time. We want to thank the authors for addressing the need for a careful and systematic evaluation of the RV in patients with AL amyloidosis. We hope that with more interesting studies like this one by Bellavia et al., quantification of RV function will become an easy available routine measurement in patients with chronic diseases.

References

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Comparison of right ventricular longitudinal strain imaging, tricuspid annular plane systolic excursion, and cardiac biomarkers for early diagnosis of cardiac involvement and risk stratification in primary systematic (AL) amyloidosis: a 5-year cohort study: reply

We thank Dr Kostenberger for his interest in our work. We agree entirely that tricuspid annular peak systolic velocity (S') are essential for detailed evaluation of suspected dysfunction of the right ventricle (RV), including patients with cardiac amyloidosis, as detailed in our manuscript. We have previously demonstrated the utility of left ventricular strain imaging as a predictor of survival in primary systemic amyloidosis. In the study alluded to by Dr Kostenberger, we demonstrated the utility of TAPSE and RV strain for identifying otherwise inapparent right ventricular dysfunction for these patients. In addition, the RV strain rate was an independent predictor of mortality. As suggested by Dr Kostenberger, we are continuing to follow this population of patients, including the serial assessment of RV function.

Dr Kostenberger mentions the work that his group has performed in demonstrating the utility of TAPSE and S' for patients with congenital heart diseases that affect the RV. Our colleagues at the Mayo Clinic who perform echocardiography for paediatric patients and for adult patients with congenital heart disease now routinely measure TAPSE and RV strain for patients with suspected RV dysfunction. In our adult echocardiography practice, we have also demonstrated the utility of RV peak systolic longitudinal strain for predicting survival in patients with pulmonary arterial hypertension and we now routinely measure RV strain, as well as...
TAPSE and S’ for these patients. On the basis of this experience, we are currently expanding our use of these RV measurements to most patients who present to us with possible RV dysfunction, and in doing so we have found that it is relatively easy to incorporate this more complete assessment of RV function into our daily practice.

References

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