


REPLY: CMR-Based Characterization of Cardiac Amyloidosis

We thank Barison et al. for their interest in our paper (1). Cardiac amyloidosis is gaining significant exposure in the cardiac magnetic resonance (CMR) community because of the characteristic and near pathognomonic findings with the technique. We reported the first study that specifically aimed to differentiate between the light chain (AL) and transthyretin (ATTR) subtypes of amyloidosis through retrospective analysis of studies performed in multiple hospitals referring to a specialist amyloidosis center (1).

We did not include right ventricular volumes, mass, and ejection fraction in the analyses because not all studies included sufficient images to perform accurate analysis. Right ventricular morphology data (particularly right ventricular mass) are less reproducible, even in single center studies (2), and in this series axial data sets had rarely been routinely obtained (3). The Query Amyloid Late Enhancement score, a novel late gadolinium enhancement analysis, was designed to be a simple add-on to standard reporting. Various versions of the Query Amyloid Late Enhancement score were devised, incorporating other CMR variables, but we and the reviewers decided to report the score independently, without including potentially confounding factors, because it was a standalone predictor of amyloid type. The thinness of the atrial chambers precludes their use as a reliable measurement when assessing late gadolinium enhancement. Altered gadolinium kinetics, already widely reported in cardiac amyloidosis, appear very similar between amyloid types (4), but further quantitative assessment in this multiple center, multiple protocol study was not feasible.

Overall, the comments highlight the limitations of any retrospective study, but we would like to reinforce the view that our findings were actually strengthened by the study design. The data were derived from nonstandardized protocols performed on various scanners; however, despite this, an obvious difference between the amyloid subtypes was shown. Our results are therefore relevant to nonspecialist CMR centers, which often raise the possibility of amyloidosis for the clinicians who refer patients for CMR. Prospective studies with specialist amyloid protocols may seem ideal; however, in the real world, our results are applicable to all CMR operators.

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