LETTERS TO THE EDITOR

doi:10.1093/ehjci/jet096
Online publish-ahead-of-print 19 May 2013

Correlating infarct size and patient prognosis: are cardiac biomarkers truly insufficient?

I read the recent article by Lonborg et al., on the prognostic value of late gadolinium enhancement-cardiovascular magnetic resonance (LGE-CMR) in ST-segment elevation myocardial infarction (STEMI) patients, with great interest.

Recently, a single troponin measurement at either 72 or 96 h post-infarction provided an accurate estimate of infarct size and the prognostic impact of this has also been demonstrated. As myocyte necrosis culminates in the formation of scar tissue, it is unsurprising that there is also a relationship between magnitude of troponin release and scar burden assessed by LGE-CMR. LGE-CMR allows visualization and measurement of infarct size but, due to logistical and economical barriers, cardiac biomarkers remain the most cost-effective means of estimating the infarct size in contemporary clinical practice. Furthermore, in our times of global austerity, it is imperative that a newer, more expensive test (in this case LGE-CMR) demonstrates not just equivalent but clear superiority over the current test of choice (troponin).

Against this background, the results of the Cox regression analysis are particularly important. The authors highlight that infarct size by LGE-CMR was a predictor of outcome in both univariable and multivariable analyses but neglect to highlight that peak troponin T concentration. As pharmacological secondary prevention measures would be similar whether the infarct was small or large, the key issue pertains to selection of patients for defibrillator therapy. The authors are correct that a randomized controlled trial is now warranted to determine whether the significantly greater up-front cost of routine LGE-CMR in STEMI patients (compared with the cost of a troponin assay) is outweighed by the incremental clinical benefit this information provides. Until that trial is performed, however, peak troponin T concentration appears an entirely reasonable—and affordable—method for estimating infarct size.

References

Benoy Nalin Shah1,2
1Cardiovascular Biomedical Research Unit, Royal Brompton Hospital, Sydney Street, SW3 6NP London, UK,
2National Heart and Lung Institute, Imperial College, London, UK
*Corresponding author. Tel: +44 207352 8121; fax: +44 2073518604, Email: benoy@doctors.org.uk

doi:10.1093/ehjci/jet097
Online publish-ahead-of-print 19 May 2013

Correlating infarct size and patient prognosis: are cardiac biomarkers truly insufficient?: reply

We welcome the insightful and constructive comments by Dr Benoy N. Shah with regard to our recent paper on the association between final infarct size measured by cardiovascular magnetic resonance (CMR) and long-term outcome in patients with ST-segment elevation myocardial infarction (STEMI).3

Dr Benoy N. Shah questions the use of admission for heart failure as a clinical endpoint, since it may be more prone to bias than reinfarction and mortality. While we agree that admission for heart failure is not quite as straightforward to define as reinfarction and mortality, admission for heart failure may still be considered as a well-defined endpoint, and is used frequently. Also, the two latter endpoints may also be prone to bias affected by poor social status, comorbidity, and non-compliance to medications including antithrombotic. For the same reason, we adjust for