Reviewer’s report

**Title:** Abnormal elevation of myocardial necrosis biomarkers after coronary artery bypass grafting without established myocardial infarction assessed by cardiac magnetic resonance

**Version:** 0 **Date:** 01 Nov 2017

**Reviewer:** Peter Henriksen

**Reviewer's report:**

This manuscript documents the increase in cardiac markers following coronary artery bypass surgery. Presented data is limited to patients without evidence of myocardial necrosis on MRI.

The patient group is well characterised with pre and post-operative MRI scans and multiple perioperative sample points for cardiac markers.

The central message is that in patients with no evidence on cMRI of myocardial necrosis, cardiac troponin release routinely occurs > 10* 99th centile. Elevations of CKMB above this threshold were less common.

**Major comments:**

This finding is relevant with respect to the guideline definition of CABG related MI and other groups have reported similar data.

The manuscript would be strengthened greatly by including analysis and discussion of the 15 patients who developed myocardial necrosis on cMRI. It is possible the data from these patients was presented elsewhere as part of the MASS-V study.

cMRI is not practical or cost-effective for routine clinical use and diagnosis of perioperative MI. Are there patterns of cardiac troponin I elevation e.g change from 6h to 24h that better predict LGE/development of MI?

What was the CPB/cross clamp time and pathology in patients who had myocardial necrosis on cMRI compared to those who did not?

Did the ECG help discriminate patients with and without LGE?
Minor comments:

The authors should comment on the ability to perform cMRI in every patient on day 6. Very often post-operative complications prevent scanning until later—with problems with breath-hold etc.

There is a discussion section on LGE which seems out of place given that those patients were not presented in this manuscript.

The manuscript need some grammatical improvement

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