Author’s response to reviews

Title: Myocardial Inflammation, Injury and Infarction During On-Pump Coronary Artery Bypass Graft Surgery

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Many thanks to all the reviewers for reading our manuscript. Please see our response below.

Reviewer #1:

Note that there is a discrepancy between the sample size shown in the abstract (n=85) and that written in the results (line 12, n=79) and also in the table 1 (Surgeon A= 34 + Surgeon B= 53 , n=87).
As stated in Figure 1, 88 patients consented to the trial but 1 patient died prior to surgery. This left 87 patients who were enrolled. Only 85 patients had a complete profile of blood tests. The abstract therefore erroneously states 85 people undergoing CABG were assessed. This should indeed state 87 patients were assessed. We thank the reviewer for correcting this. The abstract now states:

“We assessed 87 patients with stable coronary artery disease who underwent elective CABG surgery.”

79 patients underwent pre-surgery MRI. This has now been clarified in the text;

“Pre-existing (previously unidentified) myocardial infarction was common with 27% (21/79 who underwent pre-surgery MRI) of patients having pre-operative LGE.”

Considering that the combination of biomarkers + CMR allowed only a late diagnosis of MI (+/-14 days), what is the rationale for their clinical application? Are they worth? Are they cost-effective? Please comment on these issues on your discussion.

We agree with the reviewer. Specifically, MRI is a research tool and was employed only as the gold standard imaging technique to identify myocardial infarction and inflammation. Indeed we were able to employ CMR to identify a troponin profile suggesting type 5 myocardial infarction. CMR not add much to ECG and serial troponin and so is not cost effective or practical. As such we have added the following;

“Additional use of CMR is not practical nor cost effective in the clinical setting. However, patients with a late rise in cTnI could be targeted for additional diagnostic testing such as echocardiographic imaging or angiography. Such patients may also benefit from additional anti-platelet treatment, but further studies would be required for validation.”

Reviewer #2: Excellent paper, bringing light to injury, inflammation and myocardial injury after on-pump CABG

Many thanks. No changes necessary.
Reviewer #3: This was a very comprehensive study addressing perioperative myocardial inflammation, injury and infarction in patients undergoing CABG surgery, employing state of the art methods for every endpoint investigated.

And providing novel and interesting information, at times conflicting with current concepts. However, if the findings are confirmed in subsequent studies, might alter the established notion about this matter, yet firmly enrooted in the Guidelines.

As the contributing factors for these outcomes encompass on-pump-related procedures, the extension of this method for investigating off-pump would be very welcome.

Many thanks. No changes necessary.