Author's response to reviews

Title: The incidence of myocardial injury following post-operative Goal Directed Therapy

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Author's response to reviews: see over
Dear Editor,

Thanks for the chance to respond to the reviewer's comments. One of the figures is obviously confusing and we have therefore completely redrawn it. In addition, we have added a second figure describing heart rate, stroke volume and mean arterial pressure. The data in this new figure has not been published previously. The manuscript is focussed on a large amount of new data whilst previously published data is presented for the purposes of clarification only and could be removed if the editor preferred.

Given the importance of the myocardial effects of goal directed therapy and the ongoing research in this field, we believe this manuscript will make a useful contribution to the literature.

We are happy to take editorial guidance on the optimal presentation of the manuscript.

Rupert Pearse
Reviewer: Guillermo Gutierrez

Major Compulsory Revisions

1. There are several instances in the paper where references are made to heart rate and other physiological data that are not shown to the reader. For example: (paper does not have page numbers, so it is difficult to cite the pertaining paragraphs)

RESULTS:
“the DO2I target of 600 ml.min-1.m-2 was achieved…”
“… resulted in greater heart rate (P = 0.0001) and stroke volume …”
“Mean arterial pressure was similar in the two groups”

DISCUSSION
“However, the heart rate was significantly higher …”

Therefore, I do not understand the reticence of the authors to showing results for heart rate and stroke volumes, stating that it would require two additional graphs. The information could be easily placed into a table. If the authors feel this would unduly burden the paper, Table 1 in the present manuscript can be deleted and replaced by a table showing the hemodynamic and oxygen delivery data. In fact, no physiological data alluded to in the paper are shown (DO2I, MAP etc).

Response: We accept the point and have added three graphs in figure two: mean arterial pressure, heart rate and stroke volume.

2. I continue to be confused by figures 1 and 2. The manuscript states that 6 patients in the Control group (fig 1) and 8 patients in the GDT group (fig 2) were identified with troponin T > 0.01 mcg/L, yet eight points are shown in day 1, fig 1 and 9 points day 1, fig 2. This inconsistency was previously pointed out to the authors who have provided no response, other than saying that the figure legends have been altered to provide more detail, but I don’t see much difference compared to the original manuscript submission.

Response: This problem relates to the fact that most readings of troponin were negligible and also that some in some patients, trop t was not elevated at every time point. Representing this graphically has proved awkward. I have tried linking points in each patient but this looked such a mess that it was impossible to interpret. I have tried a different format with all the readings of troponin in every patient. I hope this helps to interpret the data more easily.
Reviewer: Josef Veselka

Reviewer's report:

General
It is an interesting study dealing with GDT - goal directed therapy - fluids and inotropic agents to improve cardiac output after major general surgery.
Similar paper has been published by the same group in Critical Care 2005;9:687-93.

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Major Compulsory Revisions
There are two major points that should be explained:
- I think that the present study is horribly underpowered for the estimation of the end-point (TnT).

We recognise the point. We were encouraged to submit this data after it was reviewed by the examiners of the lead author’s thesis. Both strongly felt it should be publicly accessible. Goal Directed Therapy remains a controversial treatment but could lead to very large mortality reductions according to some studies. The leading reservation most clinicians have with Goal Directed Therapy is the concern that myocardial ischaemia will cause excess mortality.

We do not argue that this post hoc analysis completely resolves this debate but we do feel that the data presented makes an important contribution to the existing knowledge in this field.

We have emphasised this issue in the discussion and have highlighted the relevant sections for your convenience.

- Some of the results have been published previously

This paper includes a large amount of new data which is placed in context by referral to the findings published previously. At the time of submission of the original paper, the troponin data had not been collated or analysed. This post hoc analysis was performed as part of the lead author’s thesis which was written after publication of the main paper.
Post hoc analyses often reveal interesting findings which have a bearing on the design of future trials. We believe this to be the case with the new data presented here.