Reviewer's report

Title: Increased cardiac index attenuates septic acute kidney injury: a prospective observational study

Version: 2
Date: 18 September 2014
Reviewer: Kamal Medlej

Reviewer's report:

1) Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

None

2) Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Page 5, Line 39: Please change to “…which aims at…”, or “…which is aimed at…”

Page 5, Lines 41-44: Please revise wording of this sentence. Could be changed to “Kidney perfusion can be improved by increasing the mean arterial pressure (MAP). Vasopressors may however increase the renal vascular resistance, which may result in a decrease in renal blood flow.”

Page 5, Line 48-49: Please consider changing to “An increase in cardiac output can be interpreted as an improvement in perfusion and was associated with restoration of renal blood flow.”

Page 5, Line 50: Please change to “…studies have shown that…”

Page 5, Line 51: Please change to “…suggesting that…”

Page 6, Line 65: Please change to “Patients who required…”

Page 6, Line 67: Please change to “…EGDT goals already achieved on admission…”

Page 6, Line 71-72: The sentence “Patients who had already reach the EGDT goals on admission (if received adequate fluid infusion in emergency department) were also excluded.” is redundant and should be deleted.

Page 6, Line 75: Please change to “After admission to the ICU, blood cultures were drawn, antibiotics were administered, and fluid infusion initiated.”

Page 6, Line 76: Please change to “A pulse indicator…”

Page 6, Line 77: Please change to “…was placed…”
Page 6, Line 79: Please change to “…the physician implemented the EGDT…”

Page 6, Line 82: Please change to “…and allowing the patient to stabilize for 30 minutes…”

Page 6, Line 84-85: Please change to “Patients were followed for 28 days, or until death, for the development of AKI.”

Page 9, Line 126: Did you men SVI instead of SI?

Page 9, Line 145: Please revise or consider changing to “…and poor renal outcome was even greater.”

Page 11, Line 155-156: Please change to “…cardiac output, leads to better perfusion of organs.”

Page 11, Line 157: “…Langenberg, et al, renal blood flow was observed to increase along with cardiac output.”

3) Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

Page 5, Line 53-55: You state that “This present prospective cohort study was designed to investigate the relationship between CI and the renal outcomes, and furthermore, to evaluate the possibility of setting a CI goal for renal protection.” While you address the first question, you do not determine or comment on a CI goal. Please mention this in the discussion.

Page 6, Line 64: Please provide your criteria for defining “septic shock”

Page 11, Discussion: Please include a discussion of the reason(s) you believe the CI did not increase in the un-increased group. Is it because not enough fluid was given or is it because the patient was no longer fluid responsive? In this case is it possible the patient received too much fluid? Could this be related to the higher incidence of AKI.

Page 11, Discussion: In Tables 2 and 3, the goal parameters of EGDT (MAP, CVP, urine output) seem mostly met in both groups even before the initiation of EGDT (except for a CVP of 6 cm H2O in the CI increased group). Please discuss this and explain why. Did these patients meet criteria for initiation of EGDT and if so what were your criteria (currently accepted criteria are persistent hypotension despite 30ml/Kg of crystalloids or a Lactate of # 4 in patients with a suspected or confirmed infection and # 2 SIRS criteria*). If the CVP was on average already at goal (10 cm H2O) in the CI un-increased group would additional fluid just be excessive at this point**?

Page 11, Line 160-163: The following sentence has to be rephrased as it is not clear in its present form “Moreover, the CI changes during EGDT was also related to development and progression of AKI, and a regression 162 further confirmed that increased CI was a protective factor for the kidney, and increased
CI in a range associated better renal outcomes.”

Page 11, Line 164-166: The following sentence needs to be rephrased as it is not clear in its present form “Of note, the EGDT period was the most aggressive phase of resuscitation to correct circulation failure and the early adequate resuscitation, which is targeting an increase in cardiac output may benefit the organ perfusion.”

Page 11, Line 169-171: The following sentence is too informal and you be rephrased “So we should weigh the advantage and disadvantage of increased CI and avoid setting an over-ambitious CI goal.”

Page 12, Line 187-188: The following sentence needs to be rephrased “Besides, the CI changes can be easily obtained through hemodynamic monitoring during EGDT, equipping itself with good applicable value in critical care departments.”


Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests