

## RESPONSE TO THE PEER REVIEWER COMMENTS

### Reviewer # 1

#### Comment: Reviewer 1

This is an interesting and clinical relevant review summarizing evidence in this special population. IAH is common in patients with acute pancreatitis, while ACS is the life-threatening version. Unfortunately, evidence regarding this issue is scarce, thus this review can provide some useful clinical information. I have some comments to improve the manuscript: 1. The authors should state clearly that there is no randomized trials on this topic in the first paragraph of Results

**Response:** We thank the reviewer for the comments. We have updated the Results section with a statement that no randomised controlled trials exist on this topic.

#### Comment: Reviewer 1

2. When discussing the timing of decompression, although not a human study, this animal study should be involved(PMID:23511145), since it highlights the potential pathophysiology harms caused by delayed decompression

**Response:** We thank the reviewer for bringing our attention to this animal study. The study has been included in the manuscript. "In a porcine model study involving 32 animals with SAP and ACS, an early surgical decompression (within 6 hours) was associated with significant improvement in systemic hemodynamic, alleviation of organ dysfunction and reduced mortality compared to decompression at 9 or 12 hours<sup>[48]</sup>." (Page 15)

#### Comment: Reviewer 1

3. I understand that decompression must be effective in decreasing the IAP in short time. Figure 1 provided very limited information to me. Alternatively, although observational, the authors can simply summarize the clinical effect of decompression

on key outcomes like mortality, and some other long-term outcomes, like the development of splanchnic venous thrombosis which was reported to be associated with IAH.

**Response:** We thank the reviewer for the observation and suggestion. We have added a column on post-decompression complications in tables 2 & 4. A new paragraph on the complications after surgical decompression is also added to the discussion. (Page 16)

## **Reviewer # 2**

### **Comment: Reviewer 2**

Nice research, finished well, but lack of novelty.

**Response:** We appreciate the effort taken during the review of our manuscript and the comment by the reviewer. Severe Acute Pancreatitis (SAP) is a common cause of Abdominal Compartment Syndrome (ACS). However, there are no randomised controlled trials on the role of surgical decompression in managing ACS with SAP. Most evidence is based on retrospective non-case controlled observational studies. In this systematic review, we summarised the evidence on the technique, timing, triggers, and complication of surgical decompression in patients with ACS with SAP. To our knowledge, this is one of the first systematic reviews on the topic.

## **Reviewer # 3**

### **Comment: Reviewer 3**

A high-level review of the status of surgical recommendations for patients with ACS associated with SAP. However, in view of the particularity of SAP, no special attention seems to be paid to the management of medical etiology after ACS and how the pathophysiological progression of SAP is reversed after surgical decompression, and

the reasons for the higher mortality and lower early closure rate after opening the abdominal cavity are insufficient.

**Response:** We thank the reviewer for the review of our manuscript. We made the following changes to the manuscript.

The section on the medical management of SAP is revised with a recent update on the etiological treatment of SAP. (Page 11)

The effect of surgical decompression on haemodynamic, MODS and outcomes is discussed on Page 14.

Higher mortality despite surgical decompression was noted in these patients. Higher mortality in these patients may be just a reflection of higher severity of the disease at the baseline. Another hypothesis is that a delay in the surgical intervention in the setting of progressive multi-organ failure and irreversible visceral ischemia contributed to higher mortality in these patients<sup>[22]</sup>. (Page 16)

The lower early closure rate in these patients was due to the risk of the recurrence of IAH after closure, higher rate of intrabdominal infections, and fistulae. Further, a higher proportion of these patients developed infected necrotising pancreatitis requiring multiple episodes of necrosectomy<sup>[18]</sup>.