Author’s response to reviews

Title: General vs. neuraxial anaesthesia in hip fracture patients: A systematic review and metaanalysis

Authors:

Julia Van Waesberghe (jvanwaesberg@ukaachen.de)
Ana Stevanovic (astevanovic@ukaachen.de)
Rolf Rossaint (rrossaint@ukaachen.de)
Mark Coburn (mcoburn@ukaachen.de)

Version: 2 Date: 06 May 2017

Author’s response to reviews:

Dear Hisham Hosny, dear Iain Moppett, dear Carlos Luis Errando,

Thank you very much for your helpful comments and giving us the chance to revise our manuscript. We addressed all points raised by the Editor and by the Reviewers, see below. We are looking forward to your response. Thank you very much.

Yours sincerely

Mark Coburn

1. Iain Moppett (Reviewer 1):

a) Technically the search was made whenever they re-did it - presumably in the last month or so.
Answer:

Thank you for your advice. We altered the date of search in the text from November 2016 to March 2017.

b) It would be helpful for the authors to offer a clinical perspective on their findings. A half-day difference in length of stay - does this matter? Similarly, a reduction in 'in hospital' mortality but no effect on 30-day mortality - what does this mean?

Answer:

Thank you for coming up with this point. We added a comment in the discussion regarding to the results of the length of stay and the in-hospital mortality/30-day mortality rate. “The meta-analysis revealed that the length of stay is one quarter of a day shorter in the neuraxial anaesthesia group, which most likely has no clinical relevance. The in-hospital mortality rate is significantly lower in the neuraxial anaesthesia group in contrast to the 30-day mortality rate. It seems like, if the patients survives the hospital stay, the risk to die in the next weeks is equal, whatever anaesthesia technique was applied. However, there is an urge for ranodmised controlled studies examining the effect of anaesthesia technique regarding the in-hospital and 30-day mortality rates taking into account possible influencing variables like the age of the patients, preexisting conditions and type of surgery.”

c) Penultimate paragraph - random effects modelling weights by effect size precision (1/SD or similar), not by study size (that is what fixed effects does)

Answer:

Thank you for your advice. The above-mentioned paragraph is amended insofar that the small studies were included, because the program RevMan weights the studies according to the precision of the effect size.

d) I realise I probably sound like a fussy author, but the data for White et al seem a little odd still. First, the authors have used range (Maximum-Minimum)/4 for their estimation of SD. Cochrane suggests this, but also an estimate based on IQR. This would avoid the issue of an SD which is greater than the mean (as given in the manuscript - figure 4).
Answer:

We altered the text and used your recalculated data for the meta-analysis of the length of stay.

e) Again, being pedantic (but hopefully helpfully), the White study only includes a small subset of the data for both GA and Spinal groups.

I have recalculated the data for mean / SD / N for White 2016.

GA_mean  19.12559  
GA_sd    20.03283  
GA_count  5508  

Spinal_mean  18.69655  
Spinal_sd   18.37501  
Spinal_count  5056  

It won't change the results much - by eye the relative weight of the study will increase (see point 3), but the mean difference is similar (0.4 days in favour of spinal).

Answer:

Thank you for the recalculated data. We altered the data in the meta-analysis accordingly. The study is now weighted with 1.6% instead of 0.1%.

e) Figure 2 - I am unclear why the authors have chosen to use the data for the anaesthetic techniques without blocks from the White study. a) This is the minority technique in the UK so doesn't represent practice adequately, b) most papers do not describe whether blocks were used, so it is more appropriate to use the whole dataset to be comparable with the other studies. Again, it won't change the overall results much.
Thank you for coming up with this point. We added the data for the anaesthetic techniques with blocks in the meta-analysis for the 30-day mortality. The study is now weighted with 7.0% instead of 1.7%.

Carlos Luis Errando, PhD (Reviewer 2):

a) In my opinion the authors have addressed the questions posed by reviewers. Regarding my proposals, the main criticisms, i.e. secondary outcomes (not reported in the first manuscript), age range of patients included, have been adequately answered.

In the Discussion part, limitations, and additional explanations of several aspects of the studies included, are reported, or are suggested as 'needed to be addressed' in future studies, as type of studies included (randomised and retrospective observational), type of surgical procedures - minimally invasive vs. invasive-, type of anesthetic procedure -iv general, inhalational, sedation plus neuraxial, etc. I recommend the recently published (not necessary to be added by authors): Fracture fixation in the operative management of hip fractures (FAITH): an international, multicentre, randomised controlled trial. Fixation using Alternative Implants for the Treatment of Hip fractures (FAITH) Investigators. DOI: http://dx.doi.org/10.1016/S0140-6736(17)30066-1. Lancet Volume 389, No. 10078, p1519-1527.

In this sense I would suggest to recommend to add studies comparing low dose vs standard dose spinal anesthesia (again not to be included in the present metaanalysis):


Answer:

Thank you for the valuable references. We included the references and adapted the last paragraph of the discussion accordingly. It would be advisable, for future systematic reviews and
meta-analyses to take studies into consideration assessing the effect of types of surgery, applied anaesthetics and their dosages.