Author’s response to reviews

Title: Hemodynamic effects of lateral tilt before and after spinal anesthesia during cesarean delivery: an observational study.

Authors:

Ahmed Hasanin (ahmedmohamedhasanin@gmail.com)
Remoon Soryal (remoon_jesus@live.com)
Sabah Abdel Raouf (sabahhazem@yahoo.com)
Mohamed Elsayad (mssayad@hotmail.com)
Yaser Abdelwahab (yaserabdelwahab@gmail.com)
Khaled Elshafaei (khaledelshafaei@gmail.com)
Bassant Abdelhamid (bassantmohamed197@yahoo.com)
Reham Fouad (rehamfouad@rocketmail.com)
Doaa Mahmoud (dsalah2000@gmail.com)
Tarek Kaddah (kaddahtarek@gmail.com)
Yasmin Hassabelnaby (yalnaby@yahoo.com; yalnaby@kasralainy.edu.eg)

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Author’s response to reviews:

Dear editor

We would like to thank you for the valuable enhancement for our manuscript. We responded to all the reviewer queries. We did all the necessary revisions aiming to meet their expectations.
Point by point response:

1. - My biggest concern is that the methodology of this study does not use phenylephrine for the management spinal hypotension. There has been a change in practice over the past decade where spinal hypotension essentially can be eliminated with the use of prophylactic phenylephrine in fusion and co-loading of fluid. Therefore the findings of this study will only apply to anesthesiologists who do not routinely use phenylephrine in their practice, and primarily still use ephedrine for hypotension. What I don't know - is whether LLT is beneficial in my c/section patients who I use phenylephrine infusions for the prevention of spinal hypotension. The authors write "we did not use prophylactic vasopressors to confound our measurements" but some acknowledgement of not using phenylephrine should be addressed in the discussion.

From a review article by Hasanin - "The use of vasopressors is more widely accepted as an effective method for decreasing PSH than fluid loading [3]. Phenylephrine (PE) is preferred vasopressor in prevention and treatment of PSH because of: faster onset [7], less incidence of fetal acidosis [28], less placental passage [29], less maternal nausea and vomiting despite the similar incidence of PSH [30,31]." [https://doi.org/10.1016/j.egja.2017.03.003]

Response

Phenylephrine is the preferred vasopressor during cesarean delivery; however, ephedrine was the available vasopressor in our hospital during conducting our study. our findings need to be confirmed in future studies where phenylephrine is used. We clarified this in the last paragraph in the discussion.

2. - Methods: it is unclear from the methods - what was the time frame for the supine, 15 degree and 30 degree measurements - AFTER spinal anesthesia. What was the time between spinal administration and the first supine measurement. A spinal anesthetic will develop over 5-10 minutes and changes in sympathetic blockade and the body's response to spinal hypotension may the reason you are seeing differences in MAP and HR. Not because of LLT. This is addressed in the discussion - but knowing the exact time frame would allow readers to better understand when these measurements were taken.

Response

The first measure was obtained after confirming of the level of spinal block. This was after 5 minutes of intrathecal injection. We clarified this in the methodology.
3. Degree of hypotension after spinal - a MAP of 50 would correspond with a BP of 80/35. This seems unacceptably low today with the routine use of prophylactic phenylephrine for c-section and spinal hypotension. If it was collected, information about APGAR scores and fetal pH values would provide information that the anesthetic conditions provided acceptable uterine-placental perfusion.

Response

We provided the APGAR scores at 1-minute and 10-minute intervals after delivery in the first paragraph in the results section. Fetal blood gases are not obtained routinely in our hospital as long as the APGAR scores are accepted.

4. Discussion - Paragraph 2 - I would recommend restructuring this paragraph - with suggestions that it be divided into 2 or 3 paragraphs. It is difficult to follow the message from these various studies. A paragraph could focus on studies that support LLT, the second - studies that favor against LLT, and a third that reviews CO monitors and how different modalities may be the reason for different results.

Response

The rephrased the paragraph and divided it as required

5. Discussion - increased HR after LLT - there is no data that shows the amount of phenylephrine that these patients received. Although the authors may be correct that the increased HR with LLT corresponds to "tachycardia induced hypervolemia" - another possible explanation is that this is the effect of ephedrine given for the management of spinal hypotension. Unclear from the methods/results - is whether the increased MAP/CO/HR are solely from LLT or could they be related to ephedrine administration.

Response

We had 62 patients with post-spinal hypotension. Thirty-three patients received ephedrine after we took our measures. Thirty-three patients received early ephedrine (before completing measures in the three angles). The hemodynamic changes were similar in patients who received early ephedrine to the changes in other patients who did not receive early vasopressors. We clarified this in the last paragraph of the results.
Graphs - please label the X-axis as your graph as degree tilt - as it could be mistakenly thought to be time interval which makes it confusion. Consider using a bag graph instead of a line graph for clarity.

Response

The X-axis was corrected. We submitted new bar graphs instead of line graphs.

Misc - please review the manuscript for acronyms that are not previously defined

Line 115: PSH - I assume is post spinal hypotension but its not previously defined.

Response

It is defined in the first paragraph of the background section.

Line 153 - ACC - I assume aortocaval compression

Response

It is defined in the first paragraph of the background section.