Author’s response to reviews

**Title:** The ability of left ventricular end-diastolic volume variations measured by TEE to monitor fluid responsiveness in high-risk surgical patients during craniotomy: a prospective cohort study

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**Author’s response to reviews:**

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Guniz Meyanci Koksal

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RE: # BANE-D-17-00259 ,entitled “The ability of left ventricular end-diastolic volume variations measured by TEE to monitor fluid responsiveness in high-risk surgical patients during craniotomy: a prospective cohort study”

Dear Editors and Reviewers:

Thank you for offering us the chance to revise the manuscript. We sincerely thank the reviewers for their constructive and informative comments. Those comments are all valuable and very helpful for revising and improving our paper. According to the comments and suggestions of the reviewers and editors, we have revised the manuscript and responded, point by point, to the comments as listed below. In order to facilitate the detection of amendments in the revised manuscript, we highlighted them in yellow font.
We would like to re-submit this revised manuscript to BMC Anesthesiology, and hope it is acceptable for publication in the journal.

Thank you for your time and consideration to our paper, looking forward to hearing from you soon.

Yours sincerely,

Guo

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Replies to reviewers and editors

First of all, we thank both reviewers and editors for their positive and constructive comments and suggestions.

Cigdem Beyoglu (Reviewer 1):

1. In page 6 line 59, authors declare that 70% of patients were hypotensive. This sentence is not clear, were the patients hypotensive before surgery, or before colloid infusion?

Reply: I am sorry for this mistake. This sentence means that patients had comorbidities of hypertension. We have revised this mistake. The revised parts were highlight in yellow font.
2. Authors should explain the detailed techniques for echocardiography and the position of the probe during TEE.

Reply: Thank you for the comments, we explained the detail of the detailed techniques for echocardiography and the position of the probe during TEE in methodology section. The added parts were highlight in yellow font.

3. Authors should give information about the patients' position during surgery, were they all supine positipn or sitting position? Because it may also affect the TEE technique.

Reply: Thank you for suggestion. In this research, no patients was in sitting position during surgery. They were all in clinostatism.

4. Evaluation of SVV with FloTrac/Vigileo system requires only intraarterial cannulation which is also a necessity for intracranial mass and aneurysm operations. So authors should clarify and emphasize the advantages of TEE compared to SVV evaluation in the meaning of invasiveness, ease of application of the technique and other superiorities.

Reply: Thank you for your suggestion, we have clarify and emphasize the advantages of TEE in the discussion part and highlight them in yellow font in discussion part.

Emre Gurcu (Reviewer 2):

1. Please mention if the semi invasive approach "TEE" had been performed before the general anesthesia or not. If not, all the hemodynamic parameters would be changed and reliability of the measurements would be decreased. Also the intracranial blood pressure would be increased, which would not be accepted.

Reply: Yes, TEE was performed after the anesthesia induction. And we have mention it in the methodology section and highlight in yellow font.
2. In the methodology section, the way that is used to measure LVEDA is not clear. It is written in the abstract that LVEDVV was measured by TEE through the changes of LV short diameter of axle simultaneously but in the methodology section it is stated that LVEDA, LVEDV and LVEDVV was calculated from the formulas? This should be clarified. Besides the formulas that were used to calculate LVEDA, LVEDV actually are the formulas to calculate LVOT area and stroke volume! If the statistics were made by using these calculations it is so normal to find significance and correlation among two methods!! You should check those formulas! .

Reply: Thank you for your comments. LVEDA, LVEDV and LVEDVV was calculated by DLVOT and VTI Which were detected by TEE from the formulas in the methodology section. SVV was continuously monitored by The FloTrac/Vigileo system. LVEDVV and SVV were detected by two different kinds of method. So there was not normality to find significance and correlation between two methods.

3. 69% of patients were hypertensive. There were no information about the hypertensive medication and intraoperative change in tension. This is also important for the stroke volume calculation.

Reply: Thank you for your comments. We agreed that the hypertensive medication and intraoperative change in tension were important for the stroke volume. We have collected data about hypertensive medication during surgery. There were 27% patients applied intraoperative hypertensive medication. Ultrasonography can not measure vascular tension, so we hadn’t collected intraoperative change in tension. And the aim of this study was to evaluate the ability of LVEDVV measured by TEE compared with SVV obtained by the FloTrac/Vigileo monitor to predict fluid responsiveness. Therefore we didn’t present information about the hypertensive medication and intraoperative vascular tension in this article.