Reviewer’s report

**Title:** Impedance cardiography as tool for continuous hemodynamic monitoring during cesarean section: randomized, prospective double blind study.

**Version:** 0 **Date:** 24 Dec 2017

**Reviewer:** Wilfried Gyselaers

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This is a nice study - small but well conducted - on the use of continuous Impedance Cardiography monitoring in pregnant women during cesarean section. I fully agree with the author's first conclusion that ICG is a promising useful tool for this particular indication. I'm not sure however about their second conclusion on the comparison between the 2 studied analgesia regimens.

Methods:

- How is the ICG device programmed? More in particular: how frequent is data sampling performed (every second, every five second, every 30 seconds...)? Are single point measurements presented by the device or were mean values calculated, and if so: how many values are used to calculate means?

- An explanation is missing on the reasons for using indexed values of cardiac output, which recently has been questioned (Ram M1, Lavie A1, Lev S2, Blecher Y1, Amikam U1, Shulman Y1, Avnon T1, Weiner E3, Many A1.Casting doubt on the value of assessing the cardiac index in pregnancy. J Matern Fetal Neonatal Med. 2017 Aug 13:1-5).

Results:

- ICG measurements differ according to maternal body constitution, which is illustrated most prominently in obese versus non-obese patients (El-Dawlatly AA. Hemodynamic profile during laparoscopic cholecystectomy versus laparoscopic bariatric surgery: the impact of morbid obesity. Middle East J Anaesthesiol. 2007 Feb;19(1):51-60). Therefore, maternal parameters such as BMI, BSA, previous intra-abdominal surgery, medication use,… should be presented and taken into account in the interpretation of inter-regimen comparison.

- As the authors explain correctly, ICG measurements in pregnant women change dramatically at birth of the baby, due to a sudden increase of venous return. An important physiologic variable contributing to this effect is the sudden drop of intra-abdominal pressure (IAP). IAP varies according to neonatal characteristics, such as birth weight and cephalic or breech position (Staelens AS1, Van Cauwelaert S2, Tomsin K1, Mesens T3, Malbrain ML4, Gyselaers W1. Intra-abdominal pressure measurements in term pregnancy and postpartum: an
observational study. PLoS One. 2014 Aug 12;9(8):e104782). These neonatal items should also be presented in Table 1 and taken into consideration in the inter-regimen comparison.

- In Table 2, a near significant statistical difference (p = 0.075) in intra-operative fluids between the two study groups is shown. What is its potential role in the small non-significant inter-regimen differences shown in the figures?

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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