Author’s response to reviews

Title: Glucose-insulin-potassium improves left ventricular performances after aortic valve replacement: secondary analysis of a randomized controlled trial

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Answers to the Editor Comments

1. A related study has been published and a cohort of patients underwent both procedures (AVR + CABG).

Indeed, a related study has already been published and it is cited in the submitted paper (reference 12).

The paper published in the Journal of Clinical Monitoring and Computing is focused in the subpopulation of patients undergoing CABGS and the current paper is focused in patients undergoing AVR. In order to avoid overlapping data between the two papers, we have excluded from this substudy 34 patients who underwent combined surgery (CABGS and AVR). Patients with severe aortic valve stenosis may present different pathological features (LV hypertrophy) compared with those suffering from coronary artery disease and these characteristics may influence the efficacy of cardioprotective interventions. All data have been re-analyzed and the paper includes the corresponding results.

As in the previous paper, we have also included TEE measurements performed following GIK/Placebo infusions, in addition to TEE measurements after weaning from CPB.

2. Overlapping text has been minimized in the Methods.
3. CONSORT statement.

In accordance with BioMed Central editorial policies, this manuscript adheres to CONSORT guidelines (http://www.biomedcentral.com/submissions/editorial-policies#standards+of+reporting), could you please ensure your manuscript reporting adheres to CONSORT guidelines (http://www.consort-statement.org/downloads) for reporting randomised controlled trials. This is so your methodology can be fully evaluated and utilised. Can you please include a completed CONSORT checklist as an additional file when submitting your revised manuscript.

Reviewer 1: No change requested

Reviewer 2:

1. Recent publication of the same group which is not cited within the current manuscript:

The article « Pre-treatment with GIK improves ventricular performances after coronary artery bypass surgery: a randomized controlled trial. » published in the J Clin Monit Comput. 2019 Feb 20 has been cited as reference.

2. Patients undergoing combined surgery (AVR+CABG) were initially included in the analysis. As suggested, we have now excluded these 34 patients and have re-analyzed the data regarding patients undergoing isolated AVR.

In the Results, we mention: « Among those undergoing isolated AVR, 63 and 44 were allocated to Placebo and GIK groups, respectively (figure 2). After exclusion of cases with unavailable or poor quality TEE (N=15), 92 patients remained for final analysis (Placebo, N= 54 and GIK, N=38).

At baseline, patients presented similarly increased LV posterior wall thickness (1.19±0.23mm and 1.21±0.19mm in Placebo and GIK groups, respectively; P=0.543) whereas LV-FAC, 2D-LVEF, 3D-LVEF and Vp were lower in the GIK group compared with the Placebo group (Table 3). Throughout the three study periods, GIK infusion produced strong interaction effects on LVFAC, 2D-LVEF, 3D-LVEF and Vp (p < 0.001). At the end of GIK infusion, LV-FAC and 2D-LVEF were unchanged whereas 3D-LVEF (mean difference [MD] +2.7%, 95% confidence interval [CI] 0.3 to 4.9%; P<0.001) and Vp (MD+8.5%, 95%CI 4.7 to 12.2%; P<0.001) were increased compared with baseline values (table 3 and figure 3). After Placebo infusion, we observed decrease in LV-FAC (MD -5.8%, 95%CI -9.1 to -2.6%), 2D-LVEF (MD -4.6%, 95%CI -6.2 to –3.1%, 3D-LVEF (MD -5.6%, 95%CI -7.2 to –3.9%) and Vp (MD -10.4%, 95%CI -12.5 to –8.3%) compared with baseline values.
3. As suggested (omission of secondary endpoints), we have deleted clinical data from this paper that now is exclusively focused on TEE results.

4. Ethical approval: “With ethical approval from the local ethics commission, a randomized controlled blinded trial was conducted at the University Hospital of Geneva and was registered November 10, 2008 (CER 08-095).

5. The discussion has been slightly modified according to data re-analysis and the corresponding results. Two references have been added in line with the vulnerability of the longitudinal fibers from hypertrophied LV to ischemia and the possibilities to detect functional changes with global longitudinal strain.


6. Minor changes: number of ethical approval and 4 Ch … RVA