Author’s response to reviews

Title: Postoperative Tight Glycemic Control Reduces Postoperative Infection In Patients Undergoing Surgery: A Meta-Analysis

Authors:
Yuan-yuan WANG (wayuyu@163.com)
Shuang-fei HU (hushuangfei77@sina.com)
Hui-min YING (13989356561@139.com)
Long CHEN (chenlong8420938@163.com)
Hui-li LI (lihuili1609@163.com)
Fang TIAN (fangtian212@163.com)
zhen-feng Zhou (zhenfeng9853@163.com)

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Dear Ernesto Maddaloni, M.D.:

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Postoperative Tight Glycemic Control Reduces Postoperative Infection In Patients Undergoing Surgery: A Meta-Analysis

Thank you very much for your valuable recommendations. We have revised our manuscript. Great thanks to you and the referee for the time and effort you expend on this paper.

Best wishes.

Yours sincerely,
Dr. zhen-feng
Editor Comments:

1. Post-operative short term mortality seems to be reduced by TGC after the inclusion of van den Berghe study. However in the results the authors still conclude “TGC showed a neutral effect (page 10, lines 10-11). This is in contrast with the new data and what they stated in the abstract. Similarly, in the discussion they have added a “Our meta-analysis further supported the study of van den Berghe that perioperative TGC did not reduce the rates of postoperative short-term mortality”, but the new analysis suggests that there is an effect on post-operative mortality. How do the authors explain this incongruence? Please carefully read all the manuscript to be sure that all statements are supported by the data presented. Be accurate.

Answer: We are so sorry for making you confused. We carefully read all the manuscript to be sure that all statements are supported by the data presented. We have revised the sentence to “TGC showed a lower risk of postoperative short-term mortality (3.8% vs. 5.4%; RR 0.692, 95% CI 0.527 to 0.909, p = 0.008; Figure. 3) and any postoperative mortality (6.3% vs. 8.0%; RR 0.792, 95% CI 0.653 to 0.960, p = 0.018; S3 Supplemental Figure. 2) without evidence of heterogeneity between articles (I2 < 0.001%, p > 0.05; Table 2).” (line 9-13, page 10, Results part) and “Our meta-analysis further supported the study of van den Berghe [1] that perioperative TGC reduce the rates of postoperative short-term mortality,” (line 27-28, page 13, Discussion part).

We also revised the sentence “These studies revealed that the risk of total postoperative infection (9.4% vs. 15.8%; RR 0.586, 95% CI 0.504 to 0.680, p < 0.001; Figure. 2) and sepsis (2.7% vs. 4.7%; RR 0.594, 95% CI 0.418 to 0.842, p = 0.003) were significantly higher in the TGC group than in the CGC group.” to “These studies revealed that the risk of total postoperative infection (9.4% vs. 15.8%; RR 0.586, 95% CI 0.504 to 0.680, p < 0.001; Figure. 2) and sepsis (2.7% vs. 4.7%; RR 0.594, 95% CI 0.418 to 0.842, p = 0.003) were significantly lower in the TGC group than in the CGC group.” (line 22-25, page 9, Results part).

We also revised the sentence “In addition, sensitivity analyses revealed a consistency of the results based on the omission of a single article at a time” to “in addition, sensitivity analyses revealed a consistency of the results based on the omission of a single article at a time for acute
renal failure, but not for neurological dysfunction”. (line 29-30, page 10 and line 1, page 11 Results part).

We also revised the sentence “This meta-analysis has shown that TGC significantly reduced total postoperative infection and wound infection regardless of whether TGC was commenced during or after surgery, but no difference was found in sepsis, pneumonia and urinary tract infection.” to “This meta-analysis has shown that TGC significantly reduced total postoperative infection, wound infection and sepsis regardless of whether TGC was commenced during or after surgery, but no difference was found in pneumonia and urinary tract infection.”. (line 22-25, page 13 Discussion part).

We also revised the sentence “Our finding was consistent with the clinical practice guideline from the American College of Physicians [30] that they found TGC was not associated with a reduction of ICU stay in the mixed medical intensive care unit /surgical intensive care unit environment.” to “Our finding was not consistent with the clinical practice guideline from the American College of Physicians [30] that they found TGC was not associated with a reduction of ICU stay in the mixed medical intensive care unit /surgical intensive care unit environment.”. (line 22-25, page 14 Discussion part).

2. Since the study is underpowered for short term mortality I suggest to balance the conclusion about short term mortality in the conclusion.

Answer: Thank you very much for your valuable recommendations. We have balanced the conclusion about short term mortality in the conclusion as following: “TGC also showed a lower risk of postoperative short-term mortality (3.8% vs. 5.4%; RR 0.692, 95% CI 0.527 to 0.909, p = 0.008), but sensitivity analyses showed that the result was mainly influenced by one study.” (line 13-16, page 3, Abstract part) and “TGC immediately after surgery significantly reduces total postoperative infection rates and short-term mortality. However, it might limit conclusion regarding the efficacy of TGC for short-term mortality in sensitivity analyses.” (line 25-27, page 3, Abstract part, line 3-5, page 13, Discussion part, and line 3-5, page 17 Conclusions part).
3. Please provide power calculation also for post-operative infection.

Answer: We have did sample size calculation and power analysis for post-operative infection and short-term mortality. (line 25-30, page 7 and line 1-4, page 8, Materials and Methods part).