Author’s response to reviews

Title: Dual Antiplatelet Therapy Up to the Time of Non-Elective Coronary Artery Bypass Grafting with Prophylactic Platelet Transfusion: Is It Safe?

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Dear editor,

We appreciate your valuable opinion as well as the reviewers comments, and we are very glad you considered the manuscript for publication. Kindly find below a point by point answer to all of the comments, appropriate corrections were made accordingly in the text.

-Answers to reviewer one:

- Surgical indication criteria for emergent urgent CABG: the patients in the Clopidogrel group were in acute coronary syndrome, 70% of these patients had positive troponin and 60% had critical left main lesion, whereas only 15 % of the control group had left main involvement, and none of the control patients had positive troponin

- Aspects of surgical technique: All surgical procedures were performed via a median sternotomy approach using cardiopulmonary bypass and cardioplegic arrest with crystalloid solution and cold water placed in the pericardial cavity during the clamp time. Harvest of both internal thoracic arteries was performed in a skeletonized fashion, saphenous vein grafts were added in most of the patients.
Criteria for indication (protocol) to use allogenic blood products

1. Red blood cells transfusion was based on the patient’s clinical condition rather than on a fixed hemoglobin value. However we followed mainly these rules:
   - Hemoglobin less than 8 mg/dl for stable asymptomatic patients, aged less than 65 years, with mixed venous oxygen saturation (SVO2) above 65%.
   - Hemoglobin between 8 and 10 mg/dl for symptomatic patients aged more than 65 years and who have an ejection fraction less than 50% and SVO2 less than 65%.

2. Indication of Fresh Frozen Plasma (FFP) transfusion was for increased perioperative blood loss with prolonged international normalized ratio (INR) more than 1.5.

3. Indications for platelet transfusion was thrombocytopenia less than 50x10^9/L and/or chest tube drainage more than 300cc/hour.

- Answers to reviewer 2:

- 8 units of platelet transfusion to me looks arbitrary. They did not mentioned the reason for this many units of platelet transfusion in their article: We thought to assess the efficacy of prophylactic platelet transfusion in reducing post operative bleeding in patients who proceeded to urgent or emergent CABG while on dual antiplatelet therapy (DAPT). Many previous studies, mentioned in the discussion part of our manuscript, used a varying amount of platelet concentrates as prophylactic platelet transfusions for patients at increased perioperative bleeding risk. In our study, we choose to give prophylactic perioperative one pool of platelet concentrate (8 units) as protocol, which is the minimal amount of platelet concentrates that can be given to assess the efficacy of such approach in patients on DAPT.

In an observational cohort study conducted by M. Baschin et al, the study protocol used two platelet concentrates before non-cardiac surgery in patients receiving antiplatelet therapy (APT).


In another study entitled Platelet transfusion for reversal of dual antiplatelet therapy in patients requiring urgent surgery: a pilot study, authors also used two platelet concentrates.

- The existing clopidogrel can bind with the freshly transfused platelets to make them ineffective in coagulation process: In vitro studies showed that prophylactic fresh platelet transfusion improves the function of aspirin and clopidogrel inhibited platelets and help surgeons to manage patients who require urgent surgeries at high bleeding risk. In another hand, fresh platelets transfused take time to be inhibited, which allow surgeons to undergo safely the surgery


- It would had been better to compare between patients who had dual antiplatelet without platelet transfusion with dual antiplatelet with platelet transfusion rather than comparing with Aspirin group.

- As we mentioned in the limitations section our major limitation was the retrospective status of the study. The aim of the study was to show the feasibility and safety of urgent CABG surgery for patients on dual antiplatelet therapy without discontinuing the anti platelet and with platelet transfusion, we could not compare the study population to patients on dual anti platelet therapy who underwent surgery without platelet transfusion since most of the surgeons do not perform CABG on dual anti platelet, based on the recommendations of the American Heart Association and American Society of Thoracic Surgeons, Clopidogrel should be stopped at least 5 days prior to surgery, making comparison of patients who require emergent/urgent CABG on DAPT up to the time of surgery who are at increased post operative bleeding risk, not allowed without giving prophylactic platelet transfusions or taking other preventives measures; however we surely took this point into consideration and added the following declaration in the limitations section: It would be of major interest to design a prospective study comparing ACS patients operated without delay and without discontinuing dual anti platelet therapy, while receiving platelet transfusion to ACS patients operated with 5 to 7 days delay after discontinuing dual anti platelet therapy.

Please do not hesitate to contact me for further comments

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