Reviewer's report

**Title:** Thrombelastographic haemostatic status and antiplatelet therapy after coronary artery bypass surgery (TEG-CABG trial): Rationale and design of a randomized clinical trial assessing and monitoring the antithrombotic effect of clopidogrel and aspirin versus aspirin alone in hypercoagulable patients.

**Version:** 1  **Date:** 27 January 2012

**Reviewer:** Paul A Gurbel

**Reviewer's report:**

Rafiq et al. designed a trial to evaluate whether hypercoagulable (MA>69) CABG patients (n=250) as measured by TEG will benefit from intensified antiplatelet therapy after surgery. Antiplatelet efficacy is determined with Multiplate aggregometry and graft patency assessed with Multislice computed tomography (MSCT) at 3-months after surgery. The initial and long-term benefits of CABG depend upon maintaining the coronary blood flow supplied by the graft. There is limited data available determining potential predictors of SVG failure and no studies to evaluate the effect of mono vs. dual antiplatelet therapy in patients who are at higher risk for thrombosis. This is well-designed trial with an extremely important aim. I have a few suggestions and comments.

1. **Background**
   1st sentence- I suggest revise sentence. CABG is conducted in approximately 1 million patients a year worldwide.

2. **Hypercoagulability and Thromboembolic risk**
   1st sentence- I suggest using the term thrombin-induced platelet-fibrin clot strength as it is more accurate.

3. **Antiplatelet therapy after CABG**
   page 6, 2nd para, line 9: incorrectly spelled antiplatelet
   page 7, 2nd line. Add a hypen after 3

4. **Drug Efficacy and Resistance**
   Multiple studies have now demonstrated a clear association between high on-treatment platelet reactivity (HPR) to ADP measured by multiple methods and adverse clinical event occurrence. There are now cutpoints associated with clinical outcomes and are more predictive and accurate than the term resistance. Suggest using term HPR instead of resistance when referring to clopidogrel. See reference (Bonello L, Working Group on High On-Treatment Platelet Reactivity. Consensus and future directions on the definition of high on-treatment platelet reactivity to adenosine diphosphate. J Am Coll Cardiol. 2010 Sep 14;56(12):919-33)
Page 8- 2nd sentence, replace activation with aggregation

5. Methods and Design
Add space between Study and population
3rd sentence-Correct acronym CABG.
4th sentence- Suggest omitting sentence
5th sentence-Patients were enrolled between the date of….

Design and Randomization
4th sentence-suggest using the term MAKH throughout as this more accurate than MA
Should mention how drug compliance was assessed?

Are you collecting in-hospital events. If so, please describe

(Major compulsory revision) mentioning additional measures to be collected (characteristics of saphenous veins, demographics, interoperative and inhospital events, blood loss). Refer to reference ( Sarzaeem MR, Scoring system for predicting saphenous vein graft patency in coronary artery bypass grafting. Tex Heart Inst J. 2010;37(5):525-30)

Last sentence can be omitted and put (figure 1) at the end of 1st sentence

Why did you decide to use Multiplate method over Platelet Mapping with TEG to determine antiplatelet response since you were already assessing hypercoagulability?

6. Description and Medical Intervention
Suggest modifying 2nd sentence- In patients randomized to DAPT, Clopidogrel…..

Why was 300mg chosen over 600mg for clopidogrel dosing given that the 600mg is proven to provide greater platelet inhibition?

The last 2 sentences are confusing. Suggest omitting or adding a limitation section

Suggest describing that uniform anticoagulation procedures and techniques (on-pump vs off pump, ect..) were used during CABG? Did you limit the amount of surgeons, as this could be a potential confounding variable for graft occlusion?

7. Outcome Measures
I suggest including secondary endpoint to assess the effect of CABG on hypercoagulability post procedure and also assess the difference in platelet reactivity between in hospital measures and 3-months . It has been demonstrated that surgery induces hypercoagulability.

8. Data and statistical Analysis (Major compulsory revision)
Must include a multivariate analysis including multiple confounding factors related to demographics and procedural variables.

9. Conclusion
2nd sentence- would combine first and second sentence. Thromboembolic is misspelled.
3rd sentence- Suggest only mentioning patients undergoing CABG not patients undergoing any surgery as you are not studying non-cardiac patients.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I have no competing interests