Utilizing Thromboelastography With Platelet Mapping To Assess Thrombotic Risk In Obese Patients

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OBJECTIVES

- Perioperative prevention of venous thromboembolic events (VTEs) in the bariatric population is of paramount clinical importance
- While there is agreement on the use of preoperative thromboprophylaxis (typically with heparin or enoxaparin), there is a paucity of objective, subject-specific metrics to determine:
  - *Which patients may be at highest risk for perioperative thrombotic events*
  - *Which pharmacologic targets may mitigate that risk*
  - *The optimal dose and duration of prophylactic therapy*.
- Thromboelastography with Platelet Mapping (TEG-PM) is an emerging point-of-care modality that provides a comprehensive profile of coagulation and platelet function and may provide insight into clot dysregulation for this high-risk group.
- This study of patients undergoing lower extremity revascularization aimed to analyze the impact obesity and diabetes have on coagulation profiles, and to correlate these data with the real-world clinical endpoint of postoperative thrombosis.

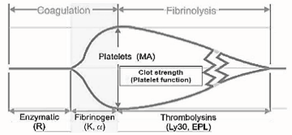
METHODS

POPULATION:



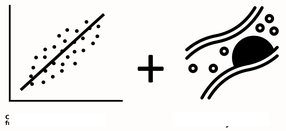
LOWER EXTREMITY REVASCULARIZATION [12/20 – 8/22]

QUANTATIVE ANALYSIS



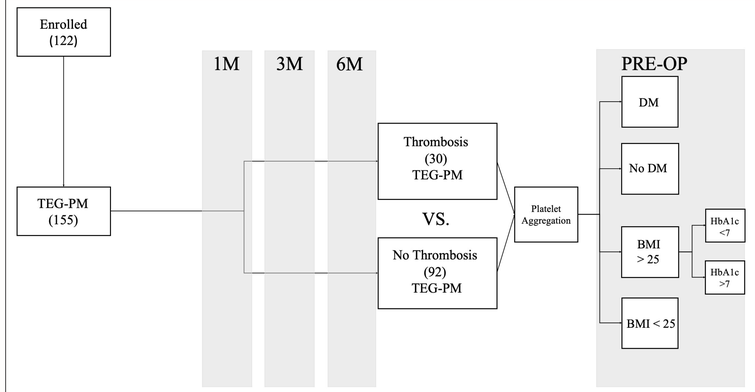
SERIAL TEG-PM ANALYSIS

PRIMARY OUTCOME



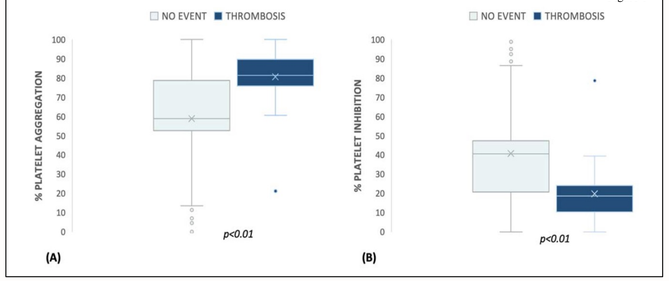
1. EVALUATION TEG + BMI & DM
2. THROMBOSIS

STUDY DESIGN: *RETROSPECTIVE OBSERVATIONAL STUDY TO ASSESS THE EFFECT OF DIABETES AND OBESITY ON COAGULATION PROFILES AND POST-OPERATIVE THROMBOSIS*



RESULTS

Figure 1



Of all TEG-PM variables assessed in the post-operative period, only platelet aggregation (and reciprocal platelet inhibition) were found to differ significantly between patients who experienced a thrombotic event and those that did not.

Figure 2A

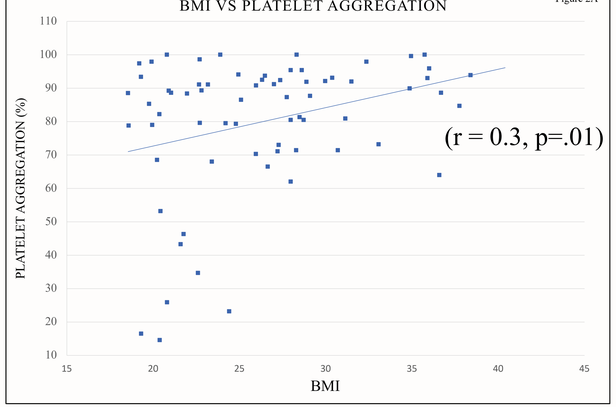


Figure 2B

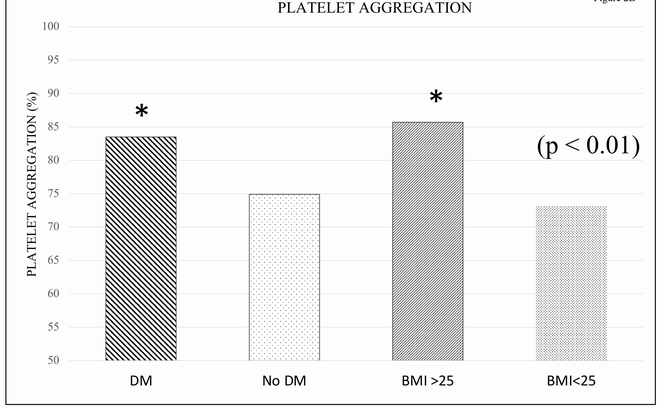
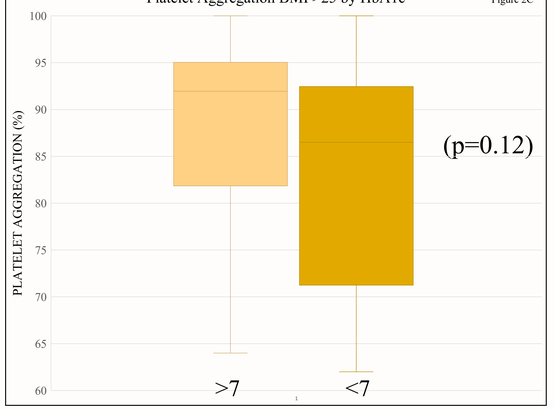


Figure 2C



CONCLUSOION

PERSONALIZED TESTING



Increased Platelet Aggregation was significantly associated with post-operative thrombosis

Platelet Aggregation was correlated with increasing BMI and overweight/obese patients demonstrated significantly increased aggregation compared to normal BMI patients (Figure 2A, 2B)

Patients with DM also showed significantly greater Platelet Aggregation compared to those without DM (Figure 2B)

There was a trend towards increased aggregation in patients with an overweight/obese patients who also had DM, compared to those without DM

Our study suggests that TEG-PM may be used to stratify risk for post operative thrombosis for obese patients or those with DM

While also suggesting a potential target for thromboprophylaxis may be antiplatelet agents

Improved risk Assessment

