Prevention

PLATELET ACTIVATION INCREASES IN PATIENTS UNDERGOING VASCULAR SURGERY

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Sunday, March 25, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Prevention: Clinical Current Topics in Anticoagulation/Antiplatelet Therapies
Abstract Category: 9. Prevention: Clinical
Presentation Number: 1192-602

Authors: Gabriel Schneider, Caron Rockman, Michael Merolla, Michael Nardi, Liang Hu, Jeffrey Berger, New York University School of Medicine, New York, NY, USA

Background: Platelets are a major contributor to atherothrombosis and may contribute to the heightened risk of perioperative cardiovascular events. We sought to examine changes in platelet activity in subjects undergoing vascular surgery.

Methods: Platelet activity in 18 patients (median age 74, 45% female) undergoing non-emergent open vascular surgery was assessed by light transmission aggregometry in response to saline, epinephrine and adenosine-5 diphosphate (ADP), and by flow cytometric analysis of monocyte-platelet aggregation (MPA). Platelet activity was assessed preoperatively (T1), 1-hour into the operation (T2), 1-hour (T3), 24-hours (T4) and 48-hours post-operatively (T5). Data were compared using the Wilcoxon Signed Ranks Test. Continuous variables are summarized as medians and (interquartile, IQR) ranges.

Results: Spontaneous platelet aggregation increased transiently during the surgical period (T1-4.8% [0.8, 10.1], T2-15% [9, 24.8], T3-6.8% [3.9, 16.3], T4-9.5% [4.8, 13.8], T5-7.3% [5.6, 41], P=0.002). Similar trends in perioperative platelet activity were noted for platelet aggregation in response to epinephrine (P=0.035) and ADP (P=0.036). Using flow cytometry, we found an increase in MPA during the perioperative period (Figure).

Conclusions: Platelet activity increases significantly during and following open vascular surgery. This data may help explain the pathophysiology of increased thrombotic risk during the perioperative period of vascular surgery.