26475 - WITHDRAWAL OF ASPIRIN INCREASES THE RISK OF PERI-OPERATIVE

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BACKGROUND: The antiplatelet effects of aspirin have shown a decrease in vascular death by 15% and nonfatal vascular events by 30%.(1) Recent publications suggest that there might be an association between peri-operative coagulation activation, post-operative hypercoagulability and peri-operative myocardial infarction. (2,3). These results might suggest a possible protective effect of aspirin in the peri-operative period.

METHODS: Following REB approval, data were prospectively collected on 2996 consecutive patients who underwent non-cardiac, non-day surgery for a 15-month period at Toronto General Hospital. The relationship between cardiac risk factors (history of CAD, CHF, CVA, elevated Creatinine, diabetes) anemia, blood transfusion, Calcium channel blockers, statins ACE inhibitors, epidural analgesia, aspirin and myocardial infarction were analyzed using descriptive statistics and logistic regression. Patients who were taking aspirin were divided into 2 groups.

Group 1 – stopped aspirin 7 days pre-operative and Group 2 continued aspirin through the peri-operative period. Diagnosis of myocardial infarction was made by a independent and blinded cardiologist based on troponin I level greater than 0.70ng/m which correlated with ECG changes, clinical symptoms and new wall motion abnormalities on echocardiography during the hospitalization period.

RESULTS: Cardiac risk factors (history of CHF, high risk surgery, history of CAD) age, gender, pre operative anemia, blood transfusion, lipid lowering therapy and aspirin had significant associations with peri-operative MI. Independently associated factors for peri-operative MI in multiple logistic regression analysis were age (OR 1.75 95% CI 1.13-2.71), gender (OR 1.76 95% CI 1.10-2.81), history of coronary artery disease (OR 2.67 95% CI 1.57- 4.53), CHF (OR 3.89 95% CI 1.639-28), High risk surgery (OR .58 95% CI 1.01-2.47) any transfusion of red blood cells (OR 2.51 95% CI 1.52-4.13) and withdrawal of aspirin within 7 days of surgery (OR 2.51 95% CI 1.37-4.66).

CONCLUSIONS: In this study aspirin withdrawal 7 days prior to surgery was identified as an independent risk factor associated with peri-operative MI. Whether the mechanism is inhibition of coagulation activation or prevention of hyper coagulation will need to be determined in future prospective studies together with the effect on peri-operative bleeding.

REFERENCES: (1). BMJ 2002; 324:71-86 (2). Anaesthesia 2005, 60, pages 1162-1167 (3). Anesth Analg 2005; 100:1576-83

Unadjusted characteristics of aspirin therapy:

	Aspirin N = 238 N (%)	Aspirin withdrawn N = 173 N (%)	P-value
Demographics			
Age >70 years	83 (34.9%)	63 (36.4%)	
Comorbid Disease			
Diabetes mellitus requiring medication	49 (20.6%)	29 (16.8%)	
Coronary Artery Disease	84 (35.3%)	59 (34.1%)	
Congestive heart Disease	5 (2.1%)	6 (3.5%)	
Creatinine conc > 176 (μmol/L)	14 (5.9%)	9 (5.2%)	
Hematology			
Anemia			
Hgb <90	44 (18.5%)	13 (7.5%)	0.001
Hgb 91-110	64 (26.9%)	30 (17.3%)	
Hgb >110	130 (54.6%)	130 (75.1%)	
None	158 (66.4%)	133 (76.8%)	
1-3 units RBC *	56 (23.5%)	27 (15.6%)	.001
More than 3 units *	24 (10.1%)	13 (7.5%)	
Pre-Op Hgb mean (std)	121 (20)	130 (18)	<.0001
Discharge Hgb mean (std)	104 (15)	106 (15)	.034
Drug Therapy			
Statins	74 (29.8%)	45 (26.1%)	