Is Age Related to Platelet Activity in Patients Presenting With Acute Coronary Syndromes?


Background: Bleeding is a major risk of pharmacologic strategies to treat acute coronary syndromes (ACS) and is increased in the elderly. This risk may be related to an age-dependent reduction in platelet activity.

Methods: Baseline platelet function and flow cytometry with monoclonal antibodies directed against multiple surface receptors were investigated in a substudy of the EARLY Trial (n=56) that treated patients presenting to the Emergency Department with early (12-24 hours) and late (25-48 hours) clinical evidence of ACS. Platelet function was assessed using platelet aggregation to 10 μM ADP, 30 μM AA, and 40 μM epinephrine, and inhibition of platelet aggregatory responses to ADP, AA, and PAF. Results: There was no significant difference in platelet aggregation to ADP, AA, or PAF between young and elderly patients. Conclusion: Age-related changes in platelet function are not significant, and current ACS treatment regimens are not affected.

1193-45 Enhanced Cortisol Secretion Does Not Control Aspirin-Inhibitable Thromboxane Biosynthesis in Patients With Acute Coronary Syndromes

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We have explored the influence of monoclonal COX-2 inhibition in enhanced thromboxane (TX) A2 biosynthesis occurring epideleptically in patients with acute coronary syndromes treated with low-dose aspirin, and 2) the influence of endogenous cortisol secretion in TXA2 biosynthesis in this setting. Whole blood TXKB and urinary 11-dehydro-TXB2 and cortisol levels were evaluated by RIA. In patients with acute myocardial infarction (AMI), n=15), unstable angina (UA; n=10) and chronic stable angina (CSA; n=15), the treatment with low-dose aspirin (160 mg/d) caused a similar suppression of platelet COX-1 activity while the biosynthesis of TXA2 in vivo, as reflected by the excetration of 11-dehydro-TXB2 in urine, was unaffected by aspirin treatment. In patients with AMI and UA vs. CSA [20±10 (p=0.01) vs 12±8 pg/mg creatinine, respectively]. The production of TXB2 in heparinized whole blood incubated for 4 h with bacterial endotoxin (LPS, 1 μg/ml) was significantly (p=0.05) higher in patients with AMI vs. CSA but not vs. UA [52±29, 28±17 and 30±21 pg/10^9 monocytes] and was post-beed suppressed (77±67%) by the selective COX-2 inhibitor L-745,337 (20 μM). Plasma levels of C-reactive protein (CRP), a marker of systemic inflammation, were higher in patients with AMI and UA vs. those with CSA (40±35 (p=0.01) and 15±14 (p=0.05) vs. 5±2.5 mg/). The urinary excretion of cortisone was signifi- cantly (p=0.01) higher in patients with AMI vs. those with UA and CSA [176±130, 50±67 and 46±52 ng/mg creatinine]. Urinary cortisol correlated with 11-dehydro-TXB2 (r=0.31, p=0.01). Urinary lipase-induced TXKB (H52±22, n=20, p=0.05) and plasma CHOP (r=0.48, n=0.06) but not the urinary cortisol excretion did not occur. In conclusion, COX-2 expression in circulating monocytes may participate in episodio in aspirin-inhibitable TXA2 biosynthesis in acute coronary syndromes. Activation of the hypophysial-pituitary-adrenal axis occurs in patients with acute coronary syndromes but it is insufficient to control the inflammatory reaction presumably triggering aspirin-inhibitable TXA2 biosynthesis in this setting.

1193-46 Increased Homocysteine Levels Predict a More Complicated Course Following Acute Myocardial Infarction

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Background: Although hyperhomocysteinemia is associated with hypercoagulability and platelet aggregation, and interference with fibrinolysis, data are scarce regarding the effect of hyperhomocysteinemia levels on clinical outcome in patients with acute myocardial infarction (AMI).

Methods: Homocysteine was determined on admission in 160 consecutive patients with AMI by high-performance liquid chromatography with fluorometric detection.

Results: Mean homocysteine levels in the entire group were 14±11 micromole/L. Homocysteine levels were higher in male patients (p<0.01) and non-diabetic patients (p<0.01), but were not associated with other risk factors or age (p=0.07, p=0.42). Patients (n=22) with homocysteine <50 micromole/L compared with those of lower levels (n=135, 10±4) had a lower incidence of diabetes mellitus (9% vs 28%, p=0.06). There was no significance difference regarding the in-hospital course and indices of infarct size, including peak CPK (p=0.7) and LVEF (p=0.45) in both groups of patients. Among the 112 patients with SA, those with homocysteine >320 micromole/L (34±9) compared with those of lower levels (n=135, 10±4), had a lower incidence of diabetes mellitus (9% vs 28%, p=0.06). There was no significance difference regarding the in-hospital course and indices of infarct size, including peak CPK (p=0.7) and LVEF (p=0.45) in both groups of patients. Among the 112 patients with SA, those with homocysteine >320 micromole/L (34±9) compared with those of lower levels (n=135, 10±4), had a lower incidence of diabetes mellitus (9% vs 28%, p=0.06). There was no significance difference regarding the in-hospital course and indices of infarct size, including peak CPK (p=0.7) and LVEF (p=0.45) in both groups of patients. Among the 112 patients with SA, those with homocysteine >320 micromole/L (34±9) compared with those of lower levels (n=135, 10±4), had a lower incidence of diabetes mellitus (9% vs 28%, p=0.06).

Conclusion: Elevated levels of homocysteine in AMI patients are associated with a higher incidence of recurrent coronary events and mortality.