

PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Plaque morphology directly related to platelet activation in ACS

ArticleInfo		
ArticleID	:	39
ArticleDOI	:	10.1186/cvm-2001-72059
ArticleCitationID	:	72059
ArticleSequenceNumber	:	18
ArticleCategory	:	Paper Report
ArticleFirstPage	:	1
ArticleLastPage	:	3
ArticleHistory	:	RegistrationDate : 2001-10-18 Received : 2000-11-28 OnlineDate : 2001-10-18
ArticleCopyright	:	Biomed Central Ltd2001
ArticleGrants	:	

Joanna Lyford, ^{Aff1}

Corresponding Affiliation: ^{Aff1}

^{Aff1} Medwire 28/11/01, UK

Keywords

Acute coronary care, cardiac angiography, platelet activation, unstable angina

Context

A new study provides prospectively established evidence of a direct association between platelet activation and plaque rupture in patients with unstable angina. Those with angiographically documented complex lesions had significantly greater expression of both the activation-dependent platelet epitope CD63 and glycoprotein IIb/IIIa aggregation sites on the platelet membrane. These factors indicate intense thrombogenic potential and could potentially be used in risk stratification for acute coronary events.

Significant findings

The authors report that patients with unstable angina were characterized by 39% higher levels of fibrinogen than those with stable angina (423 ? 304 versus 304 ? 51 mg/dl, P = 0.004). Compared with patients with stable angina, those with unstable angina had a five-fold higher percentage of platelets positive for activation-dependent CD63 (14.6 ? 5.6% versus 2.75 ? 1.6%, P = 0.0026) and a 15% higher expression of glycoprotein IIa/IIIb (517 ? 79 versus 449 ? 50, P = 0.038).

Comments

The raised levels of CD63 provide direct evidence of platelet activation and correlate with angiographic evidence of complex ulcerated lesions, the authors write. Moreover, the pathophysiologic findings further support the clinically proven pivotal role of IIa/IIIb inhibitors in the treatment of

patients with unstable angina. Further studies should confirm whether platelet activation can indeed be used by physicians to stratify patients by risk of acute events.

Methods

Investigators from St Michael's Medical Center, New Jersey, enrolled 25 consecutive patients (15 men, mean age 62 ± 3 years) with either unstable (n = 17) or stable (n = 8) angina. Venous blood samples collected within 4-6 hours of admission were analysed using flow cytometry for CD63, glycoprotein IIa/IIIb and fibrinogen levels. All patients with unstable angina underwent cardiac catheterization and had angiographic evidence of ruptured plaque. Five patients with stable angina underwent angiography and had smooth noncomplex lesions.

Additional information

References

1. Chakhtoura EY, Shamoony FE, Haft JJ, Obiedzinski GR, Cohen AJ, Watson RM: Comparison of platelet activation in unstable and stable angina pectoris and correlation with coronary angiographic findings. *Am J Cardiol* 2000 *Am J Cardiol.* 2000, 56: 835-839.