2:30

891-3 Elevation of Plasma Lipid Peroxidation Products in Patients With Unstable Coronary Artery Disease

K. Kostner, P. Yang, D. Glogar, G. Maurer, K. Huber. *Department of Cardiology, University of Vienna, Austria*

There is increasing evidence that oxidatively modified lipoproteins play a key role in the pathogenesis of atherosclerosis and that antioxidants may prevent atherosclerosis by inhibiting lipid peroxidation. Since there exist few in vivo studies on lipid peroxidation in CAD, we measured different parameters of lipid peroxidation (peroxides, conjugated dienes and TBARS) in 100 CAD patients and compared them to 115 control subjects. As expected, CAD patients had higher triglyceride (192 vs 107 mg/dl), total cholesterol (220 vs 189 mg/dl), LDL-C (148 vs 125 mg/dl) and lower HDL-C (35 vs 47 mg/dl) values as compared to the control group, respectively. All these differences were statistically highly significant ($p < 0.001$). The mean concentration of lipid peroxides in patients with CAD was 25.2 μg/dl, the mean concentration of conjugated dienes was 14.7 μg/dl and the mean concentration of TBARS was 2.0 μg/dl. In controls these values were 21.8, 11.4 and 1.6 μg/dl respectively. Significant differences were observed in both conjugated dienes and TBARS ($p = 0.01$), but not in peroxides.

When we divided the CAD group into patients with stable ($n = 54$) and patients with unstable ($n = 46$) angina, we found significantly higher levels in the latter group. Patients with unstable angina were also found to have significantly lower alpha tocopherol/LDL levels when compared to both patients with stable angina and controls.

	Peroxides	Conj. Dienes	TBARS	Tocoph./LDL
Unstable CAD	31.2 μg/dl	13.4 μg/dl	2.54 μg/dl	6.1 μg/dl
Stable CAD	18.1 μg/dl	8.0 μg/dl	1.5 μg/dl	6.7 μg/dl
	$p = 0.0001$	$p = 0.0001$	$p = 0.003$	$p = 0.01$

In *conclusion* we report here for the first time that plasma lipid peroxidation products are increased in patients with unstable angina. It might well be useful to add antioxidants such as vitamin E to the drugs that are currently used in the treatment of unstable angina.

2:45

891-4 Coronary Plaque Composition, Macrophage Infiltration and Tissue Factor Content in Patients With Diabetes Mellitus

P.R. Moreno, A. Murcia, I.F. Palacios, M. Leon, V. Bernardi, J. Lopez-C, J. Chesebro, V. Fuster, J.T. Fallon. *Massachusetts General Hospital, Harvard Medical School, Boston, MA and Mount Sinai Medical Center, NY, NY, USA*

Macrophages and tissue factor (TF) are associated with instability of coronary artery disease. To evaluate the composition of coronary diabetic lesions we performed quantitative computerized planimetry on coronary specimens obtained by coronary atherectomy of 62 lesions of diabetics and compared then with 62 lesions of non-diabetic patients. Specimens were stained with trichrome, KP-1, and TF antibody for evaluation of collagen, fibrocellular tissue, lipid pool, macrophages, and TF respectively. All patients had unstable angina.

	Diabetes		Non-Diabetes		P
	mm^2	%	mm^2	%	
Collagen	2.46 ± 0.3	57 ± 4	1.83 ± 0.2	42 ± 4	0.006
Fibrocellular	0.91 ± 0.2	19 ± 4	2.4 ± 0.3	41 ± 3	0.0001
Lipid pool	0.39 ± 0.1	9 ± 2	0.14 ± 0.04	3 ± 1	0.01
Macrophages	0.96 ± 0.2	22 ± 3	0.55 ± 0.1	12 ± 2	0.0001
Tissue Factor	1.94 ± 0.3	35 ± 5	1.99 ± 0.4	40 ± 3	0.87
TF in Collagen	0.82 ± 0.2	51 ± 8	0.55 ± 0.1	33 ± 4	0.02
TF in Fibrocell	0.59 ± 0.1	23 ± 5	1.26 ± 0.2	54 ± 7	0.001
TF in Lipid	0.53 ± 0.1	19 ± 5	0.18 ± 0.1	8 ± 2	0.03

Conclusions: Compared with non-diabetics, coronary plaque tissue from diabetics has a greater content of collagen, lipid pool and macrophages and lower fibrocellular tissue. TF content is increased in collagen and in lipid pool suggesting a more vulnerable coronary lesion with increased thrombogenicity after plaque rupture.

3:00

891-5 The Prognostic Value of Cardiac Myosin Light Chains in Acute Ischemic Syndromes – Results From TIMI 3B

A.Y. Fung, Y. Gawad, C.R. Thompson, G. Jackowski, R. Leitmann, E.M. Antman, M.J. Tanasijevic, J. Canner, B. Thompson, E. Braunwald. *University of British Columbia, Vancouver, BC, Canada*

Background: The detection of cardiac specific myosin light chain 1 (MLC1) in the serum suggests the presence of myocardial damage. We evaluated the prognostic value of this marker at presentation in 1,331 patients enrolled in the TIMI 3B study with unstable angina or non-Q myocardial infarction (MI). Comparison was made with another biochemical marker, cardiac specific troponin I (cTnI), which is known to provide prognostic information.

Results: Patients with elevated MLC1 levels ≥2.0 ng/ml at presentation were more likely to have adverse outcome by 6 weeks.

Event	MLC1 ≥2.0 ng/ml	MLC1 <2.0 ng/ml	p Value
Death	6.6%	1.4%	<0.001
Death or re-MI	13.3%	6.4%	<0.001

Patients with non-Q MI or electrocardiographic changes were more likely to have elevated MLC1 levels ($p < 0.001$). After adjusting for baseline characteristics, multivariate analysis showed that MLC1 was independently predictive of death. For each increase of MLC1 by 1.0 ng/ml, the mortality risk increased by 32% ($p < 0.001$). Using a regression analysis model that forced in age, ST-segment depression (variables that are known to predict death), and sequentially adding in the 2 biochemical markers' values, MLC1 was found to be predictive of death ($p < 0.004$), while cTnI was not (p = NS).

Conclusion: Elevated MLC1 level at presentation is an independent predictor of death in acute ischemic syndromes. It performed favorably in comparison with cTnI.

3:15

891-6 Cholesterol Reduction Rapidly Improves Endothelial Function After Acute Coronary Syndromes

J. Dupuis, J.-C. Tardif, P. Théroux. *Montreal Heart Institute, Montreal, Quebec, Canada*

Background: Although long term benefits of cholesterol lowering are well established, short term effects have not been demonstrated so that initiation of therapy after acute coronary syndromes is not considered urgent. Therapy is often delayed because hospital phase cholesterol may inadequately reflect homeostasis.

Methods: Patients with myocardial infarction or unstable angina and admission total cholesterol >5.2 or LDL >3.4 were randomized to placebo ($n = 30$) or pravastatin 40 mg daily ($n = 30$) after a mean of 10 days (time 0) for 6 weeks. Endothelium-dependent dilatation was evaluated by measuring flow mediated dilatation (FMD) of the brachial artery using high resolution ultrasound while endothelium-independent dilatation was tested after 0.4 mg sublingual NTG.

Results:

	Cholesterol (mmol/L)		FMD (%)	
	Placebo	Pravastatin	Placebo	Pravastatin
admission	6.4 ± 0.14	6.4 ± 0.19		
time 0	5.6 ± 0.16**	5.8 ± 0.22*	5.4 ± 0.72	5.0 ± 0.81
6 weeks	6.3 ± 0.19‡	4.9 ± 0.24**‡	5.7 ± 0.81	7.0 ± 0.79†

* $p < 0.05$, ** $p < 0.01$ vs admission and † $p < 0.05$, ‡ $p < 0.01$ vs time 0.

Values are mean ± SEM. Responses to NTG were identical for both groups at time 0 and 6 weeks with an overall mean of 8.6 ± 0.56%.

Conclusion: Patients with acute coronary syndromes obtain a rapid benefit from cholesterol lowering by improving endothelial function. Admission cholesterol is reliable and should be used to avoid delays in initiating therapy.