ELSEVIER

Atherosclerosis 133 (1997) 265–280

atherosclerosis

Abstracts

10th National Congress of the Italian Society for the Study of Atherosclerosis

Rome, Italy

2–3 December 1996

1

HOMOCYSTEINE AND OX LDL ANTYBODY

Anichini M, Cesaretti S*, Montagnani A , Montomoli M, Lepori M*, Franci MB, Braccini L*, Zanieri E*, Montagnani M.*
**Analysis Laboratory, I.N.R.C.A., Firenze.*
Internal Medicine, University of Siena.

Several Authors have reported higher serum values of homocysteine in diseases associated with atherosclerosis (peripheral arteriopathy, myocardial infarction, ictus cerebri). Also oxidized lipoproteins, evaluated through antibody formation and so of sure formation in vivo, have been observed, by several other Authors and by us, in very high concentrations in the atherosclerotic pathology. Some Authors have reported a better correlation of oxidized antilipoproten antibodies (oxLDL Ab) compared to total cholesterol, relatively to carotid atherosclerosis. The aim of our study has been to evaluate the classical lipidic parameters (triglycerides and cholesterol), lipoprotein (a) [Lp(a)], homocysteine and oxLDL Ab in 8 healthy control subjects, in 5 patients with coronaric disease, in 14 patients affected by atherosclerosis in various locations (multi-ATS) and in 33 patients affected by carotid atherosclerosis. The various locations of atherosclerosis have been evaluated with sufficiently sensitive instrumental diagnostic methods. The results are shown in the following table:

	TG (mg/dl)	TC (mg/dl)	Lp(a) (mg/dl)	oxLDL Ab (mg/dl)	Hcy (µmol/L)
Multi-ATS	241.3±170.0	241.5±38.3	31.5±21.1	220.7±147.6	7.5±2.1
Coronaric ATS	167.8±80.3	225.4±51.9	42.6±30.9	240.0±172.1	6.8±3.0
Carotid ATS	154.2±69.4	226.1±49.2	40.9±40.5	364.3±286.8	7.6±3.1
Controls	108.8±41.1	198.0±18.4	20.2±12.5	132.2±60.9	4.4±0.3

Our data confirm what has been reported by other Authors on the increase of homocysteine serum levels in atherosclerosis in various locations, as well as on the increase in oxLDL Ab concentration, especially in carotid atherosclerosis. Moreover, in the coronaric and carotid ATS, we have also observed the increase in Lp(a).

2

APOLIPOPROTEIN E (APO E) PHENOTYPE AND GENOTYPE IN ISCHEMIC CEREBROVASCULAR DISEASE (S), ALZHEIMER DISEASE (AD) AND IN MULTI-INFARCTUAL DEMENTIA (MID)

Antonini R., Giubilei F.*, Mazzarella B., Tisei P.*, Stefanutti C., Gori C.*, Pacioni F., Arca M., De Mattei S.#, Bertolini S.#, Fieschi C.*
Ist. di Terapia Medica Sistematica, Università di Roma "La Sapienza", *Dip. di Scienze Neurologiche, Università di Roma "La Sapienza", #Dip. di Medicina Interna, Università di Genova

Apolipoprotein E polymorphism may influence the early development of coronary artery disease as well as cerebrovascular morbidity. While Apo E is known to be associated with AD, studies on Apo E polymorphism in MID are lacking.
The present study aimed at evaluating the allele prevalences of Apo E in patients suffering from S, MID and AD, as compared to controls (C). 22 S, 14 MID and 25 AD patients were enrolled, together with 30 C free from metabolic and/or vascular disorders. The allele frequencies of Apo E were studied through both phenotype and genotype expressions, which showed a good correlation between the results obtained. Allele frequencies assessed through genotype expression are reported in table below:

	S	AD	MID	C	
ε2	0,205*	0,020	0,036	0,050	χ^2 test
ε3	0,727	0,700	0,821	0,883	(*P<0,05 - **P<0,01)
ε4	0,068	0,280**	0,143	0,067	

A significant correlation was found between ε2 allele frequency and S, and allele ε4 and AD as compared to controls, whereas no correlation was observed in MID.
The conclusion can be drawn that the gene ε2 seems to be a risk factor for S, gene ε4 proved to be such for AD, while gene ε3 is a protective factor for both diseases.

Supported by a grant of the Italian National Research Council, CNR-PF Ingegneria Genetica n. 93.0004.99.

3

EFFECTS OF HEPARIN TREATMENT ON HAEMOSTATIC ABNORMALITIES IN OBESE NIDDM PATIENTS

G. Avellone, V. Di Garbo, R. Cordova, G. Rotolo, G. Abruzzese, G. Raneli, R. De Simone, G.D. Bompiani
Institute of Clinical Medicine, University of Palermo, Italy

This study was conducted to identify mechanisms responsible for haemostatic abnormalities in obese NIDDM patients. Four group of age- and sex-matched patients were studied: 1) nondiabetic subjects (n=30) with a BMI<25; 2) obese non diabetic subjects (n=30) with a BMI>30; 3) lean NIDDM patients (n=30); and 4) obese NIDDM patients (n=30). Were mesured: fibrinogen, F.VII, F1+2, TAT, t-PA(Ag) pre and post VO and PAI-1 activity pre and post VO. In addition all these parameters were evaluated in obese NIDDM patients after 10 days of treatment with 12,500 U/day s.c. calcium heparin. At baseline obese nondiabetic subjects, lean and especially obese NIDDM patients displayed significantly higher levels of fibrinogen, F.VII, F1+2, TAT, t-PA(Ag) pre VO and PAI-1 pre and post VO and significantly lower levels of t-PA(Ag) post VO. In obese NIDDM patients treated with heparin fibrinogen, F.VII, F1+2, TAT, t-PAI(Ag) pre VO, PAI-1 pre and post VO levels significantly decreased and t-PA(Ag) post VO levels significantly increased at the end of the treatment. Our findings demonstrate in obese nondiabetic subjects, in lean and especially in obese NIDDM patients haemostatic abnormalities contributing to an enhanced risk of thrombotic complications. We conclude that in obese NIDDM patients a short-term treatment with heparin may reduce this thrombophilic state and have benefical effects on the progression of diabetic micro- and macrovascular disease.

4

PRAVASTATIN AND FUNCTIONAL PROPERTIES OF FOREARM ARTERIES IN HYPERCHOLESTEROLEMIC PATIENTS.

D. Baldassarre, G. Franceschini, M. Amato and C. R. Sirtori. E. Grossi Paoletti Center, Institute of Pharmacological Sciences, University of Milan, Via Balzaretti 9, Milan, Italy.

Studies in the experimental animal and in hypercholesterolemic patients have shown that reduction of serum cholesterol may improve defective endothelium-dependent vasodilation of arterial beds. In this study we have investigated, according to an open design, whether six month pravastatin treatment (20 mg/die) was able to restore the impaired unstimulated forearm arterial compliance (Un-$FAC_{(AUC)}$) in 14 asymptomatic type IIa hypercholesterolemic patients. The effects of pravastatin on $FAC_{(AUC)}$ responses to glyceryl trinitrate (GTN-$FAC_{(AUC)}$) and acetylcholine (ACh-$FAC_{(AUC)}$) and the effects on the characteristics of rest and post-ischaemic forearm blood flow and vascular resistance were also investigated. An additional group of five severely hypercholesterolemic patients was also selected and the effect of LDL-apheresis on the Un-$FAC_{(AUC)}$ evaluated. At the end of treatment a significant decrease of plasma LDL-C levels (22%, p=0.006 vs baseline) was found. In contrast, heart rate, blood pressure, rest flow, basal forearm vascular resistance, peak flow, minimal resistances, total-time of hyperemia and unstimulated or GTN-stimulated $FAC_{(AUC)}$ were not affected by the treatment. Instead, a modest effect of pravastatin on the response to Ach was observed; pravastatin treatment increased the dose-response curve to ACh, but the difference observed was of borderline statistical significance (p=0.06). In three out of the five patients exposed to treatment with LDL-apheresis, an immediate post-apheresis improvement of Un-$FAC_{(AUC)}$ was demonstrated; moreover, a strong inverse correlation was found between the increase in Un-FAC(AUC) after LDL-apheresis and the reduction of total and LDL cholesterol (r=0.92 and 0.89, respectively; both p<0.05). In conclusion, these data suggest that in hypercholesterolemic patients a short term hypocholesterolemic treatment with pravastatin, although improving the plasma lipid profile, does not alter significantly the functional properties of forearm arteries. Furthermore, the results obtained with patients treated with LDL-apheresis suggest that $FAC_{(AUC)}$ changes are related to the cholesterol reduction achieved.