

**haematologica**

**Journal of Hematology**



ISSN 0390-6078

volume 89, no. 8  
September 2004

Published by the  
Ferrata-Storti  
Foundation,  
Pavia, Italy

**s8**

**XVIII Congress of the Italian Society  
for Hemostasis and Thrombosis Research  
Rome, September 30-October 3, 2004**

↙  
PO-059

**POLYUNSATURATED OMEGA-3 FATTY ACIDS REDUCE THE PLASMA LEVELS OF N-EPSILON-(CARBOXYMETHYL) LYSINE ADDUCTS OF PROTEINS IN PATIENTS WITH MYOCARDIAL INFARCTION**

Basta G,\* Del Turco S,\* Lazzerini G,\* Papa A,\*  
Schmidt EB,# Christensen JH,<sup>§</sup> De Caterina R\*°

*\*CNR Institute of Clinical Physiology, Pisa, Italy;*

*#Department of Preventive Cardiology and*

<sup>s</sup>Department of Nephrology, Aalborg Hospital, Århus University, Denmark; <sup>o</sup>"G. d'Annunzio" University, Chieti, Italy

(Carboxymethyl)lysine (CML), an advanced glycation end product formed on proteins by combined nonenzymatic reactions of glycation and oxidation (glycoxidation), may be considered a marker of oxidative stress as well as a risk factor for atherosclerosis and diabetes, and is produced in conditions of inflammation. Since several studies have indicated that n-3 polyunsaturated fatty acids (PUFA) have protective effects on cardiovascular disease, we investigated the effect of dietary n-3 PUFA on plasma levels of CML in survivors of myocardial infarction. Forty patients (none diabetic) were randomly allocated to receive either 5.2 g of n-3 PUFA daily (n=20 patients, 65.4±5.48 years) or olive oil (n=20 controls 61±8 years) for 12 weeks. CML plasma levels were analysed by a specifically developed ELISA before and after n-3 PUFA supplementation. Results. Baseline plasma CML concentrations were significantly higher in the patient group vs control group 10.18 (4.40-43.12)g/mL (median 10-90 percentiles) vs 6.08 (1.76-22.60) g/mL;  $p=0.027$ ). The plasma levels of CML were significantly decreased in the patient group following to PUFA supplementation (from 10.18 to 5.57 g/mL;  $p=0.04$ ) but not in the group that received olive oil (from 6.08 to 4.26 g/mL  $p=0.11$ ). Further, in the control group decreased total cholesterol ( $p<0.05$ ) and LDL cholesterol ( $p<0.05$ ), whereas in the patient group decreased the plasma levels of creatinine ( $p<0.05$ ) and triglycerides ( $p<0.001$ ). In the patient group, CML plasma levels was inversely correlated with triglycerides ( $p<0.01$ ) but after PUFA supplementation it did not correlate more. These data indicate that circulating CML levels may be affected by dietary fatty acid intake, suggesting the in vivo occurrence of an anti-inflammatory effect of n-3 PUFA supplementation.