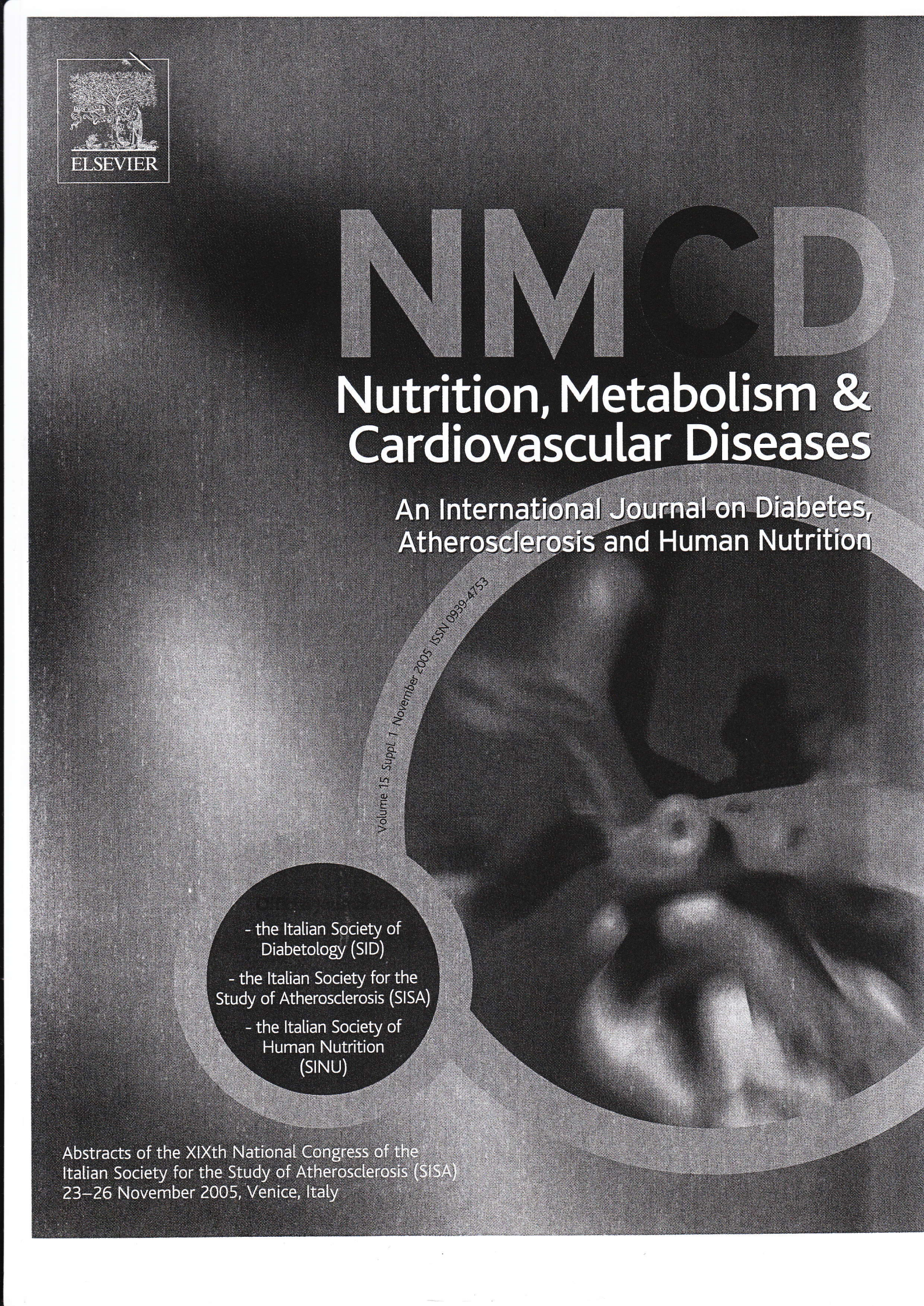
ELSEVIER

NMCD

Nutrition, Metabolism & Cardiovascular Diseases

An International Journal on Diabetes, Atherosclerosis and Human Nutrition

Volume 15 Suppl. 1 November 2005 ISSN 0939-4753



- the Italian Society of Diabetology (SID)
- the Italian Society for the Study of Atherosclerosis (SISA)
- the Italian Society of Human Nutrition (SINU)

Abstracts of the XIXth National Congress of the Italian Society for the Study of Atherosclerosis (SISA)
23–26 November 2005, Venice, Italy

6 CHRONIC USE OF LIGHT OR HEAVY CIGARETTES AND CAROTID IMT

D. Baldassarre[1,2], S. Castelnuovo[1], B. Frigerio[1], M. Amato[2], L. Gerosa[1], E. Tremoli[1,2], C.R. Sirtori[1]. [1]*E. Grossi Paoletti Center, Dept of Pharmacological Sciences, University of Milan;* [2]*Cardiologico Monzino" Center, IRCCS, Milan, Italy*
E-mail: damiano.baldassarre@unimi.it

Studies supporting the nicotine regulation model of smoking, suggested that smokers compensate the low amount of nicotine from low-nicotine cigarette by changing smoking frequency or other aspects of smoking behaviour. Aim of this study was to evaluate the effect of chronic use of light or heavy cigarettes on carotid artery intima media thickness (IMT): 96 current-, 150 former- and 418 never-smokers were recruited. 161 were light-smokers (pack-years <30) and 85 heavy-smokers (pack-years ⩾30); 63 subjects were users of cigarettes with low-nicotine (<0.7 mg), 183 with high-nicotine (⩾0.7 mg), 35 with low-tar (<7 mg) and 211 with high-tar (⩾7 mg). IMT in former- (1.05±0.33 mm) and current-smokers (1.16±0.27 mm) was significantly greater than in never-smokers (0.95±0.29 mm) (both $p < 0.002$). The difference between former and current smokers was significant ($p = 0.015$). IMT of light- (1.05±0.29 mm) and heavy-smokers (1.17±0.34 mm) was higher than in never-smokers (both $p < 0.001$). The difference between heavy- and light-smokers was also significant ($p < 0.01$). On average, IMT of low- (1.09±0.25 mm) and high-nicotine (1.08±0.33 mm) cigarette consumers was greater than in never-smokers (both $p < 0.002$). No difference in IMT was observed when low- and high-nicotine cigarette consumers were compared. IMT in patients who smoked low-tar (1.083±0.29 mm) or high-tar (1.085±0.31 mm) cigarettes was greater than in never-smokers ($p = 0.03$ and 0.0001, respectively). No differences were observed between low- and high-tar cigarette smokers. In conclusion light and heavy cigarettes have the same proatherogenic effect.

7 EFFECT OF n-3 FATTY ACIDS ON CAROTID ATHEROSCLEROSIS AND HEMOSTASIS IN HYPERTRIGLYCERIDEMIC PATIENTS: A DOUBLE BLIND PILOT STUDY IN PRIMARY PREVENTION

D. Baldassarre[1,2], M. Amato[2], S. Eligini[1], S.S. Barbieri[1], L. Mussoni[1], B. Frigerio[1], M. Kozàkovà[3], E. Tremoli[1,2], C.R. Sirtori[1], S. Colli[1]. [1]*E. Grossi Paoletti Center, Department of Pharmacological Sciences, University of Milan;* [2]*Cardiologico "Monzino" Center, IRCCS, Milan;* [3]*Department of Internal Medicine, University of Pisa, Italy*
E-mail: mauro.amato@ccfm.it

A double-blind pilot study was designed to address the impact of n-3 polyunsaturated fatty acids (n-3PUFA) on atherosclerosis, thrombosis and vascular status in hypertriglyceridemic patients. Carotid intima-media thickness (C-IMT), texture of intima-media complex (T-IMC), lipids, platelet function and hemostatic variables were evaluated in 64 hypertriglyceridemic patients receiving placebo or n-3PUFA supplementation (6 g/day) for 2 years. C-IMT and T-IMC were assessed by B-mode ultrasound. Lipids, platelet function and hemostatic variables were determined by validated methods. A fall of triglyceride levels, concomitant to a rise of HDL and LDL cholesterol levels, was observed in the active treated group. Platelet function, but not FVIIc and fibrinogen levels, was significantly reduced by n-3PUFA. C-IMT increased significantly with respect to baseline in placebo, but not in n-3PUFA group. T-IMC was significantly affected by n-3PUFA. Treatment effect did not reach the statistical significance neither in terms of IMT changes nor in terms of T-IMC. Results are suggestive of a beneficial effect of n-3PUFA on IMT progression and T-IMC that deserves to be investigated in a larger patient sample. Nevertheless the small scale of this study, the beneficial effect of n-3PUFA on platelet function, triglycerides and HDL-C is clearly highlighted.

8 hs-PCR AND CARDIOVASCULAR RISK IN TYPE 2 DIABETIC PATIENTS WITH METABOLIC SYNDROME

A. Balini[1], D. Berzi[1], B. Cremonesi[1], E. Gangi[1], G. Meregalli[1], P. Levoni[2], C. Rezzani[3], A.C. Bossi[1]. [1]*Metabolic Diseases and Diabetes Unit, and* [2]*Clinical Laboratory Unit, Treviglio-Caravaggio Hospital, Treviglio (BG);* [3]*Dpt. Applied Sciences, Università degli Studi, Pavia, Italy*
E-mail: diabetologia@ospedale.treviglio.bg.it

Background: cardiovascular disease is strictly related with the Metabolic Syndrome (MetS). There is a higher cardiovascular risk in patients with MetS and high levels of hs-PCR both in general population, both in people with Type 2 Diabetes Mellitus (T2DM). Aim: this observational study was performed to evaluate the correlation between hs-PCR levels and the prevalence of MetS with its diagnostic determinants in T2DM subjects. Patients and Methods: we studied 778 T2DM patients (age 62.3±9.5 yrs; 64/36% M/F). The MetS was defined in accordance with the definition of the NCEP-ATP III report. hs-CRP was measured by latex-enhanced immunoturbidimetry. Results: MetS was diagnosed in 64.8% of patients, being less present in M (53.3%) than in F (85.1%) (chi-square <0.001). 50% of our patients had more than 2 diagnostic determinants of MetS: the most frequent association was central obesity and arterial hypertension (26%); in those with T2DM and 3 determinants, the most preminent association was abdominal adiposity, hypertrygliceridemia and high blood pressure (13%). Nearly 19% had all the five clinical determinants. The average levels of hs-PCR was significantly higher in diabetics with MetS vs those without MetS (2.51±1.8 vs 1.69±1.4 mg/l, $p < 0.001$). Conclusions: our data confirm previous observations about the high prevalence of MetS in T2DM. hs-CRP increased with the number of components of the metabolic syndrome (one-way ANOVA $p < 0.001$), suggesting that dosing hs-PCR may be a useful pattern to grading global cardiovascular risk.

9 RESISTANCE TO AGE-RELATED WEIGHT GAIN IS ASSOCIATED WITH STIMULATION OF SKELETAL MUSCLE MITOCHONDRIAL OXIDATIVE CAPACITY DURING CALORIC RESTRICTION IN YOUNG RATS

R. Barazzoni[1], A. Pirulli[1], M. Zanetti[1], A. Semolic[1], A. Bosutti[1], Mr Cattin[1], L. Visintin[1], M. Stebel[2], L. Cattin[1], G. Guarnieri[1]. [1]*Clinica Medica – Dipartimento SCMT, and CSPA –* [2]*Animal Facility, University of Trieste, Italy*
E-mail: barazzon@units.it

Thrifty metabolic responses with reduced energy dissipation following changes in food availability could favor long-term weight gain and age-associated obesity. Caloric restriction (CR) is commonly associated with increased whole-body lipid oxidation. We hypothesized that impaired stimulation of lean tissue mitochondrial-lipid metabolism following CR in young-adult age characterizes predisposition to gain weight during aging. 4 –6 months-old male rats resistant (Fischer344: F) or prone (Wistar: W) to age-related weight gain underwent either ad-libitum feeding (AL) or CR (–30% of AL) for three weeks. Mitochondrial enzymes (citrate synthase activity: CSA) and tissue triglyceride stores (TG) were measured in gastrocnemius muscle and liver. Rats were matched for initial body weight (F: 400±4; W: 406±6 g) and weight stability-gain was confirmed in separate ad-lib fed groups at age 24-month (F: 404±6; W: 614±24 g). In AL, F had ($P < 0.05$): 1) lower CSA and higher TG content than W in liver; 2) muscle CSA and TG content comparable to W. CR: 1) reduced body weight in F more than in W ($P < 0.05$); 2) comparably increased liver CSA ($P < 0.05$ vs AL) with unchanged TG content in F and W; 3) increased CSA (+50%) and reduced TG content (–60%, both $P < 0.05$ vs AL) in muscle in F but not in W. Differential tissue fat distribution with selective liver fat storage, and stimulation of muscle mitochondrial oxidative capacity during CR are associated with, and could contribute to, resistance to age-associated weight gain.

10 FAMILIAL HYPOALPHALIPOPROTEINEMIA ASSOCIATED TO CORNEAL OPACITIES IN ABSENCE OF LCAT DEFICIENCY

C.M. Barbagallo, M. Maggiore, V. Alaimo, A. Falletta, D. Noto, A.B. Cefalù, G. Cardella, S. Catanzaro, A. Notarbartolo, M.R. Averna. *Department of Clincal Medicine and Emerging Disease, University of Palermo, Italy*
E-mail: carlob@unipa.it

Extensive and progressive corneal opacities are associated to severe HDL deficiency in a rare familial disorder called fish eye disease (FED). This disorder appears to be a variant of familial lecithin: cholesterol acyltransferase (LCAT) deficiency in which the enzyme remains partly active yet the ability of the enzyme to esterify cholesterol in high-density lipoprotein (HDL) has been lost. The rarity of this disorder has limited advances in our understanding of the pathophysiology of the HDL deficiency. However, we here describe the clinical and biochemical presentation of a Sicilian family with corneal opacity and hypoalphalipoproteinemia in absence of LCAT abnormalities. The proband, a 37-year old female, presented with a mild HDL reduction (19 mg/dl) and corneal opacity from the age of 16. Familial hypoalphalipoproteinemia (with HDL levels ranging between 25 and 34 mg/dL) was confirmed in both parents, all three brothers and one 3-years old son, whereas in a 6-years old daughter plasma lipids and HDL levels (63 mg/dL) resulted normals. LCAT activity as well as analysis of LCAT, apoA1 and ABCA1 genes did not demonstrated any abnormalities. Subsequently we suggest to have found an unknown disorder having corneal opacities associated to hypoalphalipoproteinemia in absence of the common genetic disease of HDL metabolism. The evaluation of this three-generation family seems to also indicate a possible recessive transmission of this intriguing disorder of HDL.