



Volume 7, issue 3, June 2006

ISSN 1567-5688

# ATHEROSCLEROSIS

SUPPLEMENTS

OFFICIAL JOURNAL OF THE EUROPEAN  
ATHEROSCLEROSIS SOCIETY

AFFILIATED WITH THE INTERNATIONAL  
ATHEROSCLEROSIS SOCIETY

AND

THE SOCIETY OF ATHEROSCLEROSIS IMAGING AND PREVENTION

ABSTRACTS

XIV International Symposium on Atherosclerosis  
Rome, Italy, June 18-22, 2006



P9 DIAGNOSTIC TECHNOLOGIES FOR  
CARDIOVASCULAR DISEASESTu-P9:332 **APOLIPOPROTEINS: CORRELATION WITH  
CAROTID INTIMA-MEDIA THICKNESS AND  
CORONARY ARTERY DISEASE**

L. Vladimirova-Kitova, High Medical Institute, Plovdiv, Bulgaria

Lower levels of plasma apolipoprotein A-I (ApoA-I) and higher levels of ApoB, and the ratio of ApoB to ApoA-I are considered to be independent risk factors for coronary heart disease. Carotid intima-media thickness (CIMT) is considered as a marker of atherosclerosis and in prediction of clinical coronary events. Aim of this study is to correlate the apoLp levels with coronary artery disease (CAD) and their impact on arterial thickening utilizing the CIMT as a surrogate marker.

**Methods:** Traditional lipid profile, apo A-I and B and CIMT with a B-mode scan were measured in 119 patients recruited for the study (age group 38-64 years), which included 63 male and 56 females. Mean of maximal CIMT exceeding 0.8 mm at the far wall of the common carotid artery, excluding plaques, was selected as the higher values for comparison. Seventy-six subjects had evidence for CAD as diagnosis by documented hospitalization/myocardial infarction, acute coronary syndrome, coronary angiography when feasible. Prevalence of subjects with increased IMT was higher among subjects with ApoB/ApoA-I ratio exceeding one compared to those with a ratio less than one (30.6% vs 16.5%,  $p=0.005$ ). Prevalence of CAD was significantly higher among subjects with ApoB/ApoA-I ratio exceeding one as compared to those with a ratio less than one (53.7% vs 30.3%,  $p=0.0002$ ). Subjects with apoB: apoA-I ratio exceeding one and CIMT more than 0.8 mm had 2.7-fold prevalence for CAD as against those with a ratio less than one and IMT less than 0.8 mm. We conclude that Apo-B to Apo-A ratio shows a strong association with CIMT and CAD and may play important role in addition to traditional risk factors.

Tu-P9:333 **FAMILIAL AGGREGATION OF CAROTID ARTERY  
INTIMA MEDIA THICKNESS: A  
THREE-GENERATION STUDY**E.C. Oldani<sup>1</sup>, A. Ravani<sup>1</sup>, M. Amato<sup>1</sup>, E. Tremoli<sup>1,2</sup>, J.P. Werba<sup>1</sup>,  
D. Baldassarre<sup>1,2</sup>, <sup>1</sup>Cardiologico Monzino Center, IRCCS, Milan, Italy;  
<sup>2</sup>Dept of Pharmacological Sciences, University of Milan, Milan, Italy

**Objective:** to investigate whether familial aggregation of carotid IMT is influenced by the subjects' age.

**Methods:** Twenty-four grandchildren (14 men and 10 women), one of their parents (13 men and 11 women) and one of their grandparents (6 men and 18 women), were recruited. Each of them had their CC-IMTmean, Bif-IMTmean, ICA-IMTmean and Mean-IMT measured by B-Mode ultrasound. Simple linear regression analysis by the least squares method was used to investigate correlations between carotid IMT in the young generational pairs (grandchildren vs parents) as well as in the old generational pairs (parents vs grandparents). For each generational pairs, the squared correlation coefficient ( $r^2$ ) was used to evaluate the extent of offspring's carotid IMT variability explained by the carotid IMT of their respective parents.

**Results:** The mean age ( $\pm$ SD) of grandparents, parents and grandchildren was  $77.3 \pm 6.8$ ,  $51.5 \pm 7.4$  and  $23.5 \pm 7.0$ , respectively. The corresponding figures for Mean-IMT was  $1.45 \pm 0.25$  mm,  $0.94 \pm 0.22$  mm and  $0.63 \pm 0.10$  mm, respectively. Mean carotid IMT variables of progenitors' correlated with carotid IMT of their offspring in the young generational pairs ( $r^2 = 0.24$ ,  $p < 0.015$  for Mean-IMT;  $r^2 = 0.33$ ,  $p = 0.003$  for Bif-IMTmean) but not in the old generational pairs.

**Conclusions:** Familial aggregation of carotid IMT is better appreciable in the young generational pairs. This may be due to the higher prevalence of potential confounding environmental factors in the older generational pairs.

**Funding:** Research supported in part by Italian Ministry of Health.

Tu-P9:334 **CAROTID ARTERY INTIMA-MEDIA THICKNESS IN  
65-100 YEARS OLD**H. Nakano, K. Watanabe, K. Oba, Division of Geriatric Medicine,  
Bunkyo-Ku, Tokyo, Japan

**Objective:** The aim of this study is to investigate relationship between carotid artery intima-media thickness (IMT) and risk factors with age up to 65 years old.

**Methods:** We studied 791 outpatients, aged 30 to 100 years. Subjects were divided into five groups by age: 30-54 yr (group A;  $n=73$ , 48.3yr), 55-64 yr (group B;  $n=164$ , 60.2yr), 65-74 yr (group C;  $n=284$ , 69.8yr), 75-84 yr (group D;  $n=214$ , 78.8yr), and 85-100 yr (group E;  $n=56$ , 87.8yr). Multiple regression analysis was used to IMT (dependent variable) and independent variables (age, sex, patient with diabetes, total cholesterol, systolic blood pressure, administration of statin).

**Results:** The systolic blood pressure was significantly increased and the diastolic blood pressure, serum cholesterol, and triglyceride were significantly decreased with age. There was a significant correlation between systolic and diastolic blood pressure. A significant correlation was found between serum total cholesterol and triglyceride. The mean IMT increased in a linear manner with age ( $r=0.27$ ;  $p<0.001$ ). On multiple regression analysis, age, sex, cholesterol, diabetes, and systolic blood pressure were significant predictors of IMT in 30-100yr of age group. In group A, B, and E, sex and total cholesterol were significant predictors of IMT. However, in group C, sex and systolic blood pressure were significant predictors of IMT. In group D, there was no significant predictor of IMT.

**Conclusions:** The present study indicated that IMT was not a single entity in the elderly. Especially in 65-84yr of age, different factors were affected to IMT compared to other aged group.

Tu-P9:335 **THE EFFECT OF AGE AND OTHER  
ATHEROSCLEROTIC RISK FACTORS ON CAROTID  
ARTERY BLOOD VELOCITY IN SUBJECTS  
RANGING FROM YOUNG ADULTS TO  
CENTENARIANS**S. Homma<sup>1</sup>, G. Sloop<sup>2</sup>, A. Zieske<sup>2</sup>, J.P. Strong<sup>2</sup>, <sup>1</sup>Department of Internal  
Medicine, Tokyo Tama-Hokubu Medical Center, Higashi-Murayama, Tokyo,  
Japan; <sup>2</sup>Department of Pathology, Louisiana State University Health  
Sciences Center, New Orleans, USA

**Objectives and Methods:** To evaluate the effect of age and other risk factors for atherosclerosis on arterial blood velocity, carotid arteries in 179 healthy subjects ranging from 21 to 102 years old were examined by color Doppler ultrasonography.

**Results:** Velocity in common carotid arteries (CCA) decreased significantly with age (Peak Velocity  $< \text{m/sec} > = -0.006 \times \text{Age} + 1.302$ ; Minimum Velocity  $= -0.003 \times \text{Age} + 0.461$ ). In internal carotid arteries (ICA), minimum velocity also decreased significantly with age  $< -0.002 \times \text{Age} + 0.348 >$ . In CCA, mean IMT at non-plaque sites correlated inversely with velocity. Although age was the only factor associated with decreased peak velocity in CCA in adults  $< 65$  years old ( $p=0.0106$ ), peak CCA velocity in the elderly (65 years old) was inversely associated with age ( $p=0.0002$ ) and diastolic blood pressure (DBP) ( $p=0.0025$ ), and directly associated with pulse pressure ( $p=0.0087$ ). In the elderly, minimum velocity of CCA was inversely correlated with age ( $p=0.0001$ ) and DBP ( $p=0.0021$ ). In ICA, peak velocity correlated inversely with age ( $p=0.0325$ ) in adults; however, in the elderly group, peak velocity correlated only with serum HDL-C ( $p=0.0369$ ). Minimum ICA velocity correlated inversely with age in all age groups; it was also inversely correlated with systolic blood pressure in adults ( $p=0.0179$ ) and DBP in elderly subjects ( $p=0.0689$ ).

**Conclusions:** Blood velocities in carotid arteries decreased continuously with age. In elderly, increased pulse pressure possibly has a protective role for blood flow maintenance against slowing blood flow by aging; however, its effect should be limited.

Tu-P9:336 **SMOKING HABITS AS DETERMINANT OF CAROTID  
IMT IN PATIENTS IN PRIMARY AND SECONDARY  
PREVENTION**A. De Jong<sup>1</sup>, S. Castelnovo<sup>1</sup>, B. Frigerio<sup>1</sup>, M. Amato<sup>2</sup>, A. Ravani<sup>2</sup>,  
E. Oldani<sup>2</sup>, G. De Giosa<sup>1</sup>, E. Tremoli<sup>1,2</sup>, C.R. Sirtori<sup>1</sup>, D. Baldassarre<sup>1,2</sup>, <sup>1</sup>E.  
Grossi Paoletti Center, Dept of Pharm. Sciences, Univ. of Milan, Milan, Italy;  
<sup>2</sup>Cardiologico Monzino Center, IRCCS, Milan, Italy

**Objective:** To compare the contribution of smoking habit as determinant of carotid artery intima media thickness (IMT) in patients symptomatic for vascular disease and asymptomatic controls.

**Methods:** Patients in secondary prevention (SP) were matched for gender and smoking habit with patients classified in primary prevention (PP) because free of vascular events even if ten years older ( $n=180$  per group). In both groups there were 87 never-, 68 former- and 25 current-smokers.

**Results:** Years of smoking, cigarettes/day (cig/die) and pack-years corre-