VASCULAR DISEASE

IN ASYMPTOMATIC FIREFIGHTERS THE BURDEN OF SUBCLINICAL ATHEROSCLEROSIS AS MEASURED BY BOTH CORONARY ARTERY CALCIFICATION AND CAROTID INTIMAL MEDIAL THICKENING IS ASSOCIATED WITH METABOLIC ABNORMALITIES AND BUT NOT WITH STANDARD TRADITIONAL SEROLOGICAL RISK FACTORS

ACC Poster Contributions
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Background: We hypothesized that the burden of atherosclerosis measured by direct visualization of plaque in the coronary and peripheral vasculature would be superior to only measuring the presence of traditional risk factors.

Methods: 296 firefighters asymptomatic with no prior history of coronary artery disease, underwent CT coronary calcium scoring (CAC) on a 64 slice multidetector CT, measurement of carotid intimal thickening (CIMT) with high resolution ultrasound and measurement of metabolic and lipid characteristics. The prevalence of early atherosclerosis defined as CAC score >0 and CIMT score of >0.9 mm.

Results: The prevalence of early atherosclerosis by CAC and CIMT was 32% (96) and 28% (88), respectively. A total of 127 firefighters (43%) had evidence of early atherosclerosis by either positive CAC and/or positive CIMT. 52 subjects (18%) had both abnormal CAC and CIMT and in 167 (56%) both were normal. Though the CAC+ and CIMT + group had some strong association with metabolic factors, traditional serological markers (TC, HDL-C, LDL-C or TG) were not significantly different between the groups. Age-adjusted logistic regression analysis showed only SBP, BMI and WHR were associated with early arthrosclerosis.

Conclusions: Measuring the burden of both coronary and peripheral vasculature atherosclerosis by standard imaging techniques is superior to traditional serological risk factors in identifying a high risk group of asymptomatic firefighters and should be utilized for routine screening.

Distribution of Various risk factors in Firefighters with and with out subclinical atherosclerosis

n=219	CAC+ CIMT+ (n=52)	CAC- CIMT- (n=167)	P value	Age adjusted logistic Regression P value
log Lp(a)	3.7 + 1.3	3.4 + 1.2	0.116	0.106
TC	193 + 45	202 + 38	0.175	0.567
LDL-C	124 + 40	132 + 34	0.138	0.499
TG	146 + 58	139 + 79	0.128	0.11
HDL-C	49 + 16	48 + 12	0.31	0.67
HDL 2b%	21 + 5	21 + 4	0.78	0.537
BMI	31 + 5	30 + 4	0.135	0.018
WHR	0.93 + 0.06	0.91 + 0.06	0.03	0.046
SBP	131 + 13	122 + 10	0.000001	0.003