

ASYMPTOMATIC FIREFIGHTERS WITH METABOLIC SYNDROME HAVE A HIGH INCIDENCE OF BOTH CORONARY AND CAROTID PREMATURE ATHEROSCLEROSIS-ASSOCIATED WITH INCREASED THROMBOTIC AND INFLAMMATORY MARKERS

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Background: The metabolic syndrome (metS), a concurrence of abdominal fat, disturbed glucose and insulin metabolism, dyslipidemia, and hypertension has been strongly associated not only with subsequent development of type-2 diabetes but also with atherothrombosis. We propose that in professional firefighters with metS these thrombotic and inflammatory pathways play an important role along with traditional risk factors in promoting atherosclerosis.

Methods: 295 asymptomatic firefighters (age 47±5 yrs) were recruited from Gwinnett County Georgia underwent clinical and serologic risk factor screening and carotid intima media thickness (cIMT) and coronary calcium score (CAC). MetS was defined as having three or more factors as defined by ATP III criteria.

Results: The prevalence of metS is 20%. Between the groups with and without metS there was a significant difference in CAC and cIMT scores ($p < 0.05$). Along with traditional risk factors, several inflammatory and thrombotic markers ($p < 0.05$, table) were significantly higher in metS+ group but no difference was noted in total calorie, % carbohydrates or % fat in take between the two groups. After age adjusted logistic regression analysis PAI-1, fibrinogen, plasminogen, ferritin, WBC and hs CRP were significantly different between the groups.

Conclusions: In young healthy firefighters metS not only increases the risk for early coronary and peripheral atherosclerosis but is also associated with elevated thrombotic and inflammatory markers.

Metabolic Syndrome in Firefighters is Associated with Increased Thrombotic and Inflammatory Markers

n=295	Metabolic syndrome +(n=59)	Metabolic syndrome -(n=236)	P value	Age adjusted logistic regression P value
CAC (AU)	124±342	39±174	0.007	0.022
cIMT (mm)	0.76±0.28	0.66±0.20	0.001	0.005
Total Chol	197±39	201±40	0.425	0.386
Lp(a) (mg/dl)	48±73	65±77	0.140	0.171
Fibrinogen (mg/dl)	351±67	330±58	0.019	0.028
PAI-1 (U/ml)	29±17	15±10	2.543E-14	7.58E-09
hs CRP (mg/l)	4.5±7.2	2.3±4.9	0.005	0.031
WBC (x10 ⁹ /l)	7.0±1.7	6.0±1.7	0.0002	0.001
Ferritin (mg/l)	157±128	123±94	0.026	0.042