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High cardiovascular risk in young Saudi males: cardiovascular risk factors, diet and inflammatory markers.

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Abstract

BACKGROUND:

The relationship between coronary risk score (CRS), individual coronary risk factors and the serum inflammatory markers, high sensitivity C-reactive protein (hsCRP), ceruloplasmin (Cp), and soluble intercellular adhesion molecule-1 (sICAM-1) was studied in 140 Saudi males without clinically evident coronary heart disease (CHD).

METHODS:

One hundred forty subjects without clinically evident CHD were categorized into age tertiles. Demographic data together with an estimate of CRS using Framingham and PROCAM algorithms were obtained, and serum lipid profile, glucose, hsCRP, sICAM-1, and Cp were measured. Macronutrient intake was assessed by a questionnaire. The relationship between CRS, biochemical markers and diet was assessed by univariate and multivariate analysis.

RESULTS:

There was no significant difference in median hsCRP, sICAM-1 or Cp between the age groups. Serum Cp was positively associated with age ($r=0.224$, $p<0.01$) and FRS score ($r=0.174$, $p<0.05$). Serum sICAM-1 was negatively associated with PROCAM score ($r=-0.183$, $p<0.05$). sICAM-1 was positively associated with HDL cholesterol ($r=0.36$, $p<0.0001$) among non-diabetics and negatively associated ($r=-0.397$, $p<0.05$) among diabetic subjects. Age and dietary intake of saturated fatty acids together explained 7.9% of the variation in

serum Cp level in a stepwise multiple regression model. Similarly 6.5% of the variation in serum sICAM-1 level was explained by the total cholesterol/HDL-C ratio. The youngest tertile of the group (<30 y) had the highest dietary intake of energy, fat and saturated fatty acids ($p < 0.05$), and also had a high prevalence of obesity, smoking and sedentary lifestyle.

CONCLUSION:

We have demonstrated that there is a high prevalence of coronary risk factors and poor dietary intake within a Saudi male population, and that dietary factors are associated with serum sICAM-1 and ceruloplasmin but not hsCRP concentrations in this group