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Relationship between indices of iron status and coronary risk factors including diabetes and the metabolic syndrome in Saudi subjects without overt coronary disease.

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Abstract

There have been inconsistent reports on the relationship between iron status and coronary artery diseases (CAD), and little data on this relationship in non-Caucasian populations. We assessed dietary iron by questionnaire and measured serum iron and ferritin levels in 270 Saudi male subjects without established CAD, 130 of whom were angiogram negative. Serum lipid profile, glucose, high sensitivity-C reactive protein (hs-CRP), serum soluble intercellular adhesion molecules-1 (sICAM-1), and caeruloplasmin were measured in all subjects. The angiogram negative patients, had lower serum ferritin ($p < 0.05$) and iron ($p < 0.0001$) levels than the 140 subjects without reported cardiovascular diseases (CVD). Serum iron correlated with serum triglycerides ($p < 0.0001$) and total cholesterol ($p < 0.05$) levels for this latter group and the groups combined. Serum ferritin correlated with serum total cholesterol and low-density lipoprotein (LDL)-cholesterol in the combined group ($p < 0.05$), and was correlated with blood glucose and serum LDL-cholesterol ($p < 0.05$) in the subjects without reported CVD. After adjustment for confounding variables, serum iron levels remained a significant correlate with total calorie intake and serum triglycerides. Serum ferritin also correlated significantly with cholesterol intake and fasting serum total cholesterol. Dietary iron was significantly related to dietary cholesterol and fiber, age, smoking habits, and serum total cholesterol level. Hence, indices of iron status were related to several coronary risk factors in the Saudi population