Heavy metals have an important role in atherosclerosis all over the body; Since Framingham we have been blaming the wrong culprit

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There is increasing concern regarding the health effects of exposure to various heavy metals in the environment. This is particularly true for mercury, cadmium, lead, aluminum and arsenic. The cardiovascular consequences of metal toxicity have not been published widely enough because of some sort of misunderstanding of the cholesterol role and the atherosclerosis pathological findings. Lead exposure increased through the mid 1970’s, largely as a result of use of tetraethyl lead in gasoline. At the peak of lead production, the atmospheric release of lead reached 600,000 tons annually. The half-life of lead in the body is extremely long as it accumulates in the bone. The association between lead and cardiovascular disease has been recognized for years and there is consistent epidemiological evidence that lead is an established risk factor for hypertension, promotes oxidative stress and inflammation, the triggering event of atherosclerosis. Cadmium production increased during the 20th century as a result of the production of nickelcadmium batteries, metal coatings and plastic stabilizers. Food and smoking are the major sources of cadmium for the general population. Once ingested, cadmium is stored in the kidneys, liver, lungs, pancreas and central nervous system, with a half-life of over 15 to 45 years. A recent systematic review concluded that the evidence supports the role of cadmium as a cardiovascular disease risk factor, especially for coronary disease. Understanding that atherosclerosis is an inflammatory disease and not "fat deposits blocking arteries" will improve preventative strategies.

Biography

Sergio Mejía Viana has completed his Cardiology training and Doctorate at the University Clinic of Navarre. He was an interventional Cardiologist, Angiologist and Phlebologist for 20 years. He is a Fellow of the European Society of Cardiology, has written more than 100 scientific publications including abstracts, articles and book chapters. He returned to clinical practice with high interest in prevention. Currently, he is a Consultant at the Medical Investigation Unit in St. Bernard’s Hospital in Gibraltar.

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