

C-Reactive Protein

Traditional risk factors such as tobacco use, hypertension, and elevated cholesterol do not account for all cardiovascular disease. There is a growing body of evidence that point to other factors that increase the frequency of coronary incidents. Many myocardial infarctions occur in people without these traditional risk factors. Research is emerging that implicates the inflammatory process because it encourages coagulation and damage to the endothelium, thus the development of atherosclerosis. Inflammation, especially chronic low-grade inflammation may be an important cause of cardiovascular disease. The etiology of low-grade inflammation is probably multifactorial and a current favored etiological theory suggests that the cause is microbial. Possible microbial culprits are Chlamydia pneumonia and cytomegalovirus. However, in a large meta-analysis study by Whincup et al, it was concluded that inflammatory processes, unrelated to chronic infection are likely to be involved in coronary heart disease.¹

The best marker for the detection of low-grade inflammation may be C-reactive protein (CRP). It is produced in the liver in response to systemic insult. Hepatic production increases up to a thousand fold directly after any trauma, ischemia, infection, or necrosis.² The biological half-life of CRP is not influenced by age, liver or kidney function, or pharmacotherapy.³ It acts as a surveillance molecule and provides early defense. CRP binds to a wide range of substance such as damaged tissue, nuclear antigens, and pathogenic organisms. CRP activates the complement system and stimulates the production of proinflammatory cytokines, which makes it an extremely sensitive marker for inflammation especially microvasculitis.⁴ High levels are associated with a poor systemic endothelial vasodilation.⁵ It is also much higher in persons with dementia. CRP is very likely to be the most important prognostic marker available today. In fact, CRP alone predicts

overall and cardiovascular mortality.⁶ Research has shown that men with elevated levels of CRP have a threefold increase in the risk of a future heart attack and a twofold increase in the risk of a future stroke.⁷ AAL Reference Laboratories now offers an ultra-sensitive assay for C-Reactive Protein. This extremely valuable inflammatory marker can help the clinician in the diagnosis and prognosis of cardiovascular disease.

References:

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