An Update on Heart and Inflammation

Inflammation is a normal part of the body's defense to injury or infection, and in this way, it is beneficial. But inflammation is damaging when it occurs in healthy tissues or lasts longer when it is known as chronic inflammation. It may persist for months or years.

During the past three decades or so, research has shown that inflammation is as important as cholesterol in the development of atherosclerosis. At present, it is recommended that screening for inflammation, which is easily measured with an inexpensive blood test be done along with your lipid screening.

DOES INFLAMMATION IS A FRIEND OR ENEMY

Inflammation comes in two forms, acute, which is short lived and would often cause symptoms, such as pain or swelling, or it can be chronic, which is long lasting and often silent.

Acute inflammation is a natural immune response to a health threat, such as injury or infection and results in an outpouring of white blood cells and other chemical messengers which help to heal the wound or eliminate the bug causing the infection. On the other hand, chronic low-grade inflammation often initiated by harmful substances, such as high blood sugar or excessive fat in the tissues.

This slow chronic process has become increasingly common in our current environment and it is common factor in many health conditions, including cardiovascular disease.

WHAT CAUSES CHRONIC INFLAMMATION

Chronic inflammation can be caused by many factors, including obesity, insulin resistance, diabetes, autoimmune conditions like rheumatoid arthritis, lupus, periodontal disease, chronic infections, and exposure to toxins like tobacco smoke and air pollution.

ROLE IN HEART DISEASE

Chronic inflammation plays a key role in every stage of atherosclerosis, from initial plaque formation to plaque rupture and heart attack. Inflammatory cells accumulate in artery walls, releasing chemicals that promote plaque growth and instability. When these plaques rupture, they can cause sudden heart attacks.

SCREENING FOR INFLAMMATION

High sensitivity C-reactive protein (hs-CRP) is a simple blood test that measures inflammation. Levels below 1 mg/L are low risk, 1-3 mg/L are average risk, and above 3 mg/L are high risk.

Other markers include fibrinogen and interleukin-6 (IL-6).

TREATING INFLAMMATION

Statins have anti-inflammatory effects beyond lowering cholesterol. For patients with elevated LDL and elevated inflammation despite statin therapy, adding low-dose colchicine (a medication traditionally used for gout) has been shown to reduce cardiovascular events.

Lifestyle modifications remain key: anti-inflammatory diet (Mediterranean diet), regular exercise, adequate sleep, stress management, and maintaining healthy weight.

New drugs targeting inflammation specifically (like_canakinumab) are being studied but are not yet standard of care.

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