COMMENTARY

The pathogenesis of coronary artery disease

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DESCRIPTION

Coronary Artery Disease (CAD) is caused by plaque build-up in the wall of the arteries that supply blood to the heart. Plaque is made up of cholesterol deposits and it causes inside of the arteries to narrow over time. Coronary arteries are the blood vessels that supply oxygen-rich blood to our heart muscle to keep it pumping and the coronary arteries are directly on top of our heart muscle. There are four main types of coronary arteries the right coronary artery, the left coronary artery, the left anterior descending artery, the left circumflex artery.

Atherosclerosis is the build-up of plaque inside our arteries. Plaque consists of fatty substances, waste products, calcium and the clot-making substance fibrin. As plaque continues to collect on our artery walls, our arteries narrow and stiffen. Plaques damage our arteries, which stops blood flow to our heart muscle. If our heart does not get enough blood, it can't get the oxygen and nutrients it needs to work properly and this is called ischemia. Not getting enough blood supply to our heart muscle can lead to chest discomfort or chest pain and it is also called angina and it may leads to heart attack.

Symptoms

Coronary artery disease mild symptoms that indicate our heart is pumping harder to deliver oxygen-rich blood to our body. The most common symptoms are chest pain or shortness of breath, walking upstairs at light. Sometimes we may not know until we have a heart attack. Symptoms of heart attack includes angina. Angina is described as heaviness, tightness, pressure, aching, burning, numbness, fullness, squeezing. Symptoms of heart attack in women may include some different like discomfort, pain in the shoulders, neck, abdomen.

Diagnosis

Coronary artery diagnostic tests may include electrocardiograph tests and this test records the electrical activity of the heart and can detect heart attack, ischemia and heart related issues. Exercise stress tests also known as a treadmill test to determine how well heart functions and this test also can detect angina and coronary blockages. Cardiac catheterization test involves inserting small tubes into the blood vessels of the heart to evaluate heart function including the presence of coronary artery disease.

The first step in treating coronary artery disease is to reduce our risk factors and it may change our life style. The things should be done by the treated people is not to smoke, manage health problems, Eat a heart-healthy diet, limit alcohol use, increase our activity level. Our healthcare provider will recommend medications to best manage our risk factors for heart disease is that medication to lower our cholesterol level, such as statins, bile acid sequestrates, niacin and fibrates and the medications to stop angina, such as nitrates/nitro-glycerine.

Interventional procedures are nonsurgical treatments to get rid of plaque build-up in the arteries and prevent blockages. Common procedures are balloon angioplasty and stenting. Coronary artery bypass graft surgery involves creating a new path for blood to flow when there is a blockage in the coronary arteries. In most cases, the surgeon removes blood vessels from our chest, arm or leg, and creates the new pathway to deliver oxygen-rich blood to the heart.

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