Diagnosis and Management of Chronic Coronary Artery Disease

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DESCRIPTION

Coronary Artery Disease (CAD) is a condition that affects the coronary arteries which supplies blood to the heart. In CAD, plaque development narrows or blocks one or more of the coronary arteries. Chest discomfort (angina) is a very common symptom. CAD can lead to heart attacks and some other complications such as arrhythmias and heart failure. Atherosclerosis is the one which causes coronary artery disease. Atherosclerosis is the gradual development of plaque in arteries throughout the body. Coronary arteries supply oxygenated blood to the heart. Plaque development in these arteries limits the amount of blood that can reach to the heart. People who have plaque in their coronary arteries often will also have plaque which is developed elsewhere in the body. This can lead to the conditions such as carotid artery and peripheral artery disease.

There are two main forms of coronary artery disease.

Stable ischemic heart disease

This is the chronic form. Coronary arteries gradually narrow over the years. As time passes, the heart reduces to receive the amount of oxygenated blood. The person may experience some symptoms, but the person can live with the condition every day.

Acute coronary syndrome

This is a sudden form of medical emergency. A plaque in a coronary artery suddenly gets ruptured and forms a blood clot that leads to the blockage of blood flow to the heart. This sudden blockage causes a heart attack. Angina pectoris, or chest pain and discomfort, is the very common symptom of CAD. Angina pectoris can occur when too much plaque builds up in an artery, narrowing it. A narrowed artery can block blood flow to the heart muscle and also to the other parts of the body, which can cause chest pain. The feeling can also be experienced in shoulders, arms and jaws. For many people, the first clue to CAD is a heart attack. Heart attack symptoms include:

• Chest pain or discomfort (angina pectoris)
• Weakness, nausea (stomach illness), cold sweats, etc.,
• Pain or discomfort in the arm or shoulder

• Difficulty in breathing

Over time, CAD weakens the heart muscles. This can lead to heart failure, a serious condition in which the heart cannot pump blood as it should. The person may have had CAD for years and shows no symptoms until the person have a heart attack. That is why CAD is called as a "silent killer".

The risk factors are:

• Overweight
• Lack of exercise
• Chronic Kidney Disease.
• Sleep apnea
• Breathing difficulty (dyspnea)
• Unhealthy diet
• Dizziness or light-headedness.
• Palpitations
• Tiredness
• Nausea, upset stomach, or vomiting.
• Weaknesses.
• Smoking and alcohol consumption
• Excessive stress, depression and anger
• High blood pressure
• High blood cholesterol levels
• Hyperglycaemia

A doctor will examine the person, takes the blood pressure, listen to the heartbeat with a stethoscope, and discuss the symptoms, risks, and family history. The specific person may also get tests like this:

• Electrocardiogram (ECG or EKG): Measures the heart's electrical activity and can assess heart damage.
• Stress test: This test involves walking on a treadmill or pedalling a stationary bike in the clinic while monitoring the ECG, heart rate, and blood pressure.
• Chest X-ray
• Blood tests: For checking the blood sugar, cholesterol, and triglycerides (a type of fat in the blood) levels.
• Cardiac catheterization: Here, a doctor inserts a very thin, flexible tube (called a catheter) through a blood vessel in the arm or leg into the heart. Then injects a dye through the catheter and uses x-ray video to look inside the heart.

- Computed Tomography (CT) Coronary Angiogram: By using CT and contrast dye the 3D image of the heart is seen as it moves. Detects coronary artery occlusion.
- Coronary artery calcium scan: It helps in measuring the amount of calcium in the walls of the coronary arteries (a sign of atherosclerosis). It does not determine if the person has a significant blockage, but it can help to determine the risk of CAD.
- Echocardiogram (echo): It evaluates the heart's structure and function by using the sound waves.

CONCLUSION

Cardiac rehabilitation is a very important program for people who are recovering from a heart attack, heart failure, or any other heart problems that requires surgery or medical attention. In these people, cardiac rehabilitation helps in improving the quality of life and helps preventing another cardiac event. A team of people helps with cardiac rehabilitation, including health care teams, counselling to find ways to reduce stress and improve mental health. Lifestyle changes, e.g., healthier diet (less salt, less fat), more physical activity, achieving a healthy weight, quitting smoking and reducing alcohol consumption. Medications used to treat CAD risk factors, such as high cholesterol, high blood pressure, and arrhythmias and a surgical procedure to restore blood flow to the heart.