COMMENTARY

Diagnosis and treatment of myocardial infarction

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INTRODUCTION

Myocardial infarctions (MI) are also known as heart attack. The terms "myo" and "cardial" refer to the heart, while "infarction" refers to tissue death caused by a lack of blood supply. Heart muscle may be permanently damaged as a result of this tissue death. The majority of heart attacks are diagnosed in an emergency hospital environment. A doctor will use diagnostic criteria such as history and symptoms, Electrocardiogram (ECG), stress test, Echocardiogram, stress echocardiogram, nuclear stress test, coronary angiography, and cardiac CT (Computerised Tomography) scan etc. for diagnosing MI.

DIAGNOSIS

Coronary angiogram

A coronary angiogram is a diagnostic procedure that utilizes X-ray imaging to examine the blood vessels in heart. The test is usually performed to determine if there is a blockage in blood flow to the heart. The test is usually performed to determine if there is a blockage in blood flow to the heart. Coronary angiograms are part of a general group of procedures known as heart (cardiac) catheterizations. Cardiac catheterization can be used to diagnose and treat a variety of heart and blood vessel conditions. The most common type of cardiac catheterization technique is a coronary angiography, which can be used to diagnose cardiac problems. During a coronary angiogram, a dye that can be seen on an X-ray machine is injected into heart's blood vessels. The X-ray machine produces a sequence of images (angiograms) that illustrates regarding issues in the blood vessels.

Echocardiogram

Sound waves are used to create images of your heart in an echocardiogram. Doctor can observe the patient's heart beat and blood pump with this standard test.

Electrocardiogram (ECG)

The electrical signals in heart are recorded by an electrocardiogram. It's a simple and painless test for detecting cardiac problems and used in monitoring of heart's condition. Electrocardiograms (ECGs or EKGs) are commonly performed in a clinic, or hospital room.

TREATMENT

Improved blood supply to the heart muscle is most common goal of myocardial ischemia therapy. Medications, surgery, or both may be recommended by a doctor, depending on the severity of disease condition.

MEDICATIONS

Medications to treat myocardial ischemia include such as Aspirin, Nitrates, Beta blockers, Calcium channel blockers, Cholesterol-lowering medications, Angiotensin-Converting Enzyme (ACE) inhibitors etc.

Aspirin: A daily aspirin or other blood thinner can help to prevent coronary artery blockage by lowering the risk of blood clots. Before initiating of aspirin therapy one has to definitely consult cardiologist, as because it may cause adverse events in people who are having blood disorders/bleeding issues.

Nitrates: These drugs enlarge arteries, allowing more blood to flow to and from the heart. Better blood flow means your heart doesn't have to work as hard.

Beta blockers: These drugs work by relaxation of heart muscle, slowing down of the heart beat and lowering blood pressure, thereby allowing blood to flow more easily to heart.

Calcium channel blockers: These drugs relax and widen blood vessels, allowing more blood to flow through your heart. Calcium channel blockers slow down the pulse rate thereby reducing workload on heart.

Cholesterol-lowering medications:

These drugs reduce the amount of primary material that builds up in the coronary arteries.

Angiotensin-converting enzyme (ACE) inhibitors: These drugs aid in the relaxation of blood vessels and the reduction of blood pressure. If a person has high blood pressure or diabetes in addition to myocardial ischemia, then the physician may prescribe an ACE inhibitor. ACE inhibitors may also be used if you have heart failure or if your heart doesn't pump blood.

PROCEDURES TO IMPROVE BLOOD FLOW

To enhance blood flow, more intensive treatment is sometimes required. Procedures that could be beneficial include:

Angioplasty and stenting: A catheter (a long, thin tube) is placed into the constricted section of artery. To expand the artery, a wire with a tiny balloon is put into the constricted region and inflated. To maintain the artery open, a tiny wire mesh coil (stent) is frequently placed.

Coronary artery bypass surgery: A graft is created by a surgeon using a vessel from another region of patient's body to allow blood to flow around the blocked or constricted coronary artery. This form of open-heart surgery is typically indicated for patients with several narrowed coronary arteries.

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