

# A short Note on Myocardial Infarction and its Diagnosis

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## ABSTRACT

A myocardial infarction (also known as a heart attack) is a possibly deadly condition caused by a lack of blood flow to the heart muscle. Blood flow abnormalities can be affected by various factors, but the most common reason is a blockage in one or more of your heart's arteries.

Blood supply to a section of your heart ceases or drops significantly, causing that area of your heart muscle to die. When a section of your heart can't pump due to lack of blood flow, it might disrupt the entire heart's pumping sequence. Blood flow to the rest of your body is reduced or may even block, as a result, which can be fatal.

The majority of heart attacks are caused by a blockage in one of your heart's blood arteries. This is most commonly caused by plaque, a sticky material that can accumulate on the insides of your arteries (similar to how pouring grease down your kitchen sink can clog your home plumbing). This build up is known as atherosclerosis.

Plaque deposits inside the coronary (heart) arteries can sometimes split open or rupture, causing a blood clot to become lodged where the rupture occurred. If the clot stops the artery, the heart muscle will be deprived of blood, resulting in a heart attack.

**Key Words:** *Myocardial infarction; Blood flow, Heart's arteries, Heart's blood arteries*

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## HEART ATTACKS CAUSED BY STEMI AND NON-STEMI

The electrical signal from your heart is separated into portions using letters of the alphabet beginning with P and ending with U. The ST component of the wave reveals activity in the lowest two chambers of the heart. These chambers are known as the left and right ventricles.

The ST segment is normally flat, but a heart attack that damages the ventricles typically causes the ST segment to be considerably higher than normal. This type of heart attack is known as an ST-Elevation Myocardial Infarction, or STEMI. STEMI and non-STEMI heart attacks are the two basic kinds of heart attacks. STEMI heart attacks are often more severe.

Heart attacks without a blockage are possible, although they are uncommon, accounting for just approximately 5% of all heart attacks. This kind of heart attack can occur for a various reasons, including:

**Artery spasm:** Your blood arteries contain muscular lining that permits them to dilate or constrict as needed. These muscles might twitch or spasm at times, blocking off blood supply to the heart muscle.

**Trauma:** This includes coronary artery fractures or ruptures.

**Obstruction caused by a blood clot or an air bubble (embolism)** that becomes lodged in a coronary artery.

## RISK FACTORS

A number of important variables influence risk of having a heart attack. They are:

1. Atypical lipid profile/apolipoprotein levels in the blood (increased ApoB/ApoA1)
2. Hypertension
3. Diabetes mellitus
4. Insufficient physical activity
5. Alcoholic beverages consumption (weaker association, protective)

## DIAGNOSIS

Certain types of examinations can offer images of the heart. These are some examples:

**Angiogram:** This test includes taking an X-ray after injecting a dye-like material into your blood that may be seen on an X-ray. This enables to observe places where there is little or no blood flow.

**Heart computed tomography (CT) scan:** This imaging technique creates a highly detailed scan of the heart using X-rays and computer processing.

**Heart MRI:** This test creates a picture of the heart using a strong magnetic field and computer processing.

**Nuclear heart scans:** These scans, like angiography, employ a radioactive dye injected into your blood. They differ from an angiography in that they employ computer-assisted technologies like as computed tomography (CT) or positron emission tomography (PET) scans.

## TREATMENT

Restoring blood supply to the injured heart muscle as quickly as feasible is the goal of treating a heart attack. This can occur through a variety of means, ranging from medicine to surgery.

### Oxygen Supplements

Supplemental oxygen is frequently given to those who are experiencing difficulty breathing or have low blood oxygen levels, in addition to conventional heart attack therapies. The oxygen can be inhaled through a tube that lies just below your nose or a mask that goes over your nose and mouth. This raises the quantity of oxygen in the circulation and relieves the pressure on your heart.

### Medications

Aspirin and other blood-thinning treatments are examples of anti-clotting medications.

Nitroglycerin is a medication used to treat chest discomfort. It is also a potent

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vasodilator, which means it stimulates blood vessels to dilate, allowing blood to flow more readily.

Thrombolytic (clot-busting) drugs are used for intravenous (IV) treatments which break down and dissolve blood clots. These drugs are typically used exclusively in emergency situations.

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