

## A Short Note on Acute Myocardial Infarction

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### ABOUT THE STUDY

Acute myocardial infarction, often known as a heart attack, is a potentially fatal disorder that occurs when blood flow to the heart muscle is cut off suddenly, causing tissue damage. The most common cause is a blockage in one or more coronary arteries. A blockage can be caused by plaque formation, which is primarily made up of fat, cholesterol, and cellular waste materials, as well as a blood clot forming on the obstruction. Due to a lack of oxygen, a Myocardial Infarction causes irreparable damage to the heart muscle. A myocardial infarction can cause a reduction in diastolic and systolic function, making the patient more susceptible to arrhythmias. Furthermore, a myocardial infarction can result in a variety of significant consequences. The aim is to reestablish blood flow and reperfusion the heart. The better the prognosis, the earlier the treatment (less than 6 hours after symptom beginning).

A reduction in coronary blood flow is the cause of acute myocardial infarction. Cardiac ischemia occurs when the available oxygen supply is insufficient to match the demand. Coronary artery blood flow is reduced for a variety of reasons. Atherosclerotic plaques commonly rupture and thrombose, resulting in a reduction in coronary blood flow. Coronary artery embolism, which affects 2.9 percent of patients, cocaine-induced ischemia, coronary dissection, and coronary vasospasm are among the other causes of reduced oxygenation/myocardial ischemia. The blockage of atherosclerotic plaques is responsible for 70% of fatal occurrences in patients with acute myocardial infarction. Because atherosclerosis is the leading cause of acute myocardial infarction, risk factors for the condition are frequently reduced. Myocardial infarction is caused by modifiable risk factors in 90% of men and 94 percent of women. Factors that can be changed such as Cigarette smoking, exercise, hypertension, obesity, cholesterol, LDL, and triglyceride levels are all modifiable risk factors. On the other hand, age, sex, and family history are non-modifiable risk factors for atherosclerosis.

Atherosclerotic rupture triggers an inflammatory cascade including monocytes and macrophages, thrombus formation, and platelet aggregation. As a result, oxygen delivery through the coronary artery is limited, and myocardial oxygenation is compromised. The ischemia cascade is triggered when the

mitochondria are unable to produce ATP, resulting in endocardial apoptosis (cell death) or myocardial infarction. With notable exceptions due to genetic variability, coronary arteries have distinct and diagnostic territorial distributions. The left anterior descending coronary artery, for example, supplies the interventricular septum, anterolateral wall, and ventricular apex. The left circumflex artery supplies blood to the inferolateral wall. The right coronary artery transports oxygen and nutrients to the right side of the ventricle. The inferior wall is supplied by either the left circumflex or the right coronary artery [1-4].

### Symptoms of a heart attack

**Discomfort or pain in the chest:** This discomfort or pain in your chest may feel like a tight ache, pressure, fullness, or squeezing that lasts longer than a few minutes. This ailment could come and go. Pain in the upper torso: Pain or discomfort in your shoulders, arms, back, neck, teeth, or jaw may spread beyond your chest. There could be pain in your upper body but no discomfort in your chest.

**Stomach ache:** The pain may spread down into your abdomen and feel like heartburn.

**Breathing problems:** Panting for air or try to inhale deeply. This can happen before you acquire chest discomfort, or it can happen even if you don't have any.

**Anxiety:** For no apparent reason may get a sensation of impending doom or feel as if you're having a panic attack.

**Lightheadedness:** Feeling dizzy or as if you are about to pass out in addition to chest pressure.

**Sweating:** With cold, clammy skin, you may suddenly break out in a sweat.

**Nausea and vomiting are common side effects:** Vomiting or feel sick to your stomach.

**Palpitations in the heart:** Feels as if your heart is skipping beats, or you might simply be aware that it is pounding.

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