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An Overview of Myocardial Infarction Patients

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Abstract

When blood flow to the coronary artery of the heart is diminished or halted, damage to the heart muscle ensues. This is known as a myocardial infarction (MI). The most common symptom is chest pain or discomfort, which can move to the shoulder, arm, back, neck, or jaw [1]. It usually occurs in the middle or left side of the chest and lasts several minutes. It's probable that the discomfort will occasionally feel like heartburn. Other symptoms include shortness of breath, nausea, dizziness, faintness, a cold sweat, or tiredness. About 30% of people experience atypical symptoms. Rather than chest pain, women are more likely to experience neck discomfort, arm pain, or weariness. Approximately 5% of persons over the age of 75 have had a MI with no or few preceding symptoms [2]. A MI can cause heart failure, abnormal heartbeat, cardiogenic shock, or cardiac arrest.

Keywords: Abnormal heartbeat • Heartburn • Coronary artery • Cardiac arrest • Cardiogenic shock

Introduction

Ischemia, or a lack of oxygen to myocardial tissue, causes heart muscle tissue death (infarction) (myocardium). It's a type of acute coronary syndrome that describes a change in symptoms related to heart blood flow that develops quickly or over a short period of time [3]. Unlike the second type of acute coronary syndrome, unstable angina, a myocardial infarction occurs when cells die, which can be detected by a blood test for biomarkers (the cardiac protein troponin). A MI can be classified as a ST elevation myocardial infarction (STEMI) or a Non-ST elevation myocardial infarction (NSTEMI) depending on the outcomes of an ECG [4].

Acute myocardial infarction, or heart attack, is a potentially lethal condition that occurs when blood flow to the heart muscle is abruptly cut off, causing tissue damage. The most common cause is a blockage in one or more coronary arteries [5]. Plaque buildup, which is largely made up of fat, cholesterol, and cellular waste elements, can cause a blockage, as can a blood clot growing on the obstruction.

Literature Review

A MI must be treated as soon as possible. Aspirin is a good first-line treatment for a suspected MI. Nitroglycerin and opioids can help with chest discomfort, but they don't improve overall outcomes. Extra oxygen should be taken by those with low oxygen levels or shortness of breath. Percutaneous coronary intervention (PCI), which includes forcing the arteries open and maybe stenting them, or thrombolysis, which involves eliminating the blockage with drugs, are two options for treating STEMI. Individuals with a non-ST elevation myocardial infarction (NSTEMI) are usually given heparin, with PCI being done in high-risk patients. In patients with multiple coronary artery blockages and diabetes, coronary artery bypass surgery (CABG) may be recommended instead of angioplasty. Following a MI, lifestyle adjustments, as well as long-term medication with aspirin, beta blockers, and statins, are frequently suggested [1-2].

Risk factors

The most prevalent risk factors for myocardial infarction are advanced age, active smoking, high blood pressure, diabetes mellitus, and total cholesterol and high-density lipoprotein levels. Male sex, low levels of physical activity, a family history of myocardial infarction, obesity, and alcohol intake are all risk factors for myocardial infarction. Coronary artery disease is the leading cause of myocardial infarction. Risk factor stratification scores such as the Framingham Risk Score usually incorporate myocardial risk variables. At any age, men are more prone than women to acquire cardiovascular disease. High blood cholesterol levels, especially high low-density lipoprotein and low high-density lipoprotein, as well as high triglycerides, are all known risk factors [1-3].

Many myocardial infarction risk factors can be altered, the most important of which is cigarette smoking (including secondhand smoke). Smoking is thought to be the cause of 36% of coronary artery disease, while obesity is thought to be the cause of 20%. A lack of physical activity has been linked to 7–12 percent of cases. Job stress, which accounts for about 3% of cases, and persistent high stress levels are less common stress-related causes.

Symptoms of myocardial infraction

While chest pain and shortness of breath are the most typical symptoms of a heart attack, the signs and symptoms can vary greatly. The following are the most common signs and symptoms of a heart attack: You may trust this source:

- Chest pressure or tightness
- Pain in the chest, back, jaw, or other upper-body areas that lasts more than a few minutes or goes away and returns back
- Sweating
- Nausea
- Vomiting
- Shortness of breath
- Nervousness
- Feeling like you're about to pass out
- A racing heart
- A sense of impending doom.

An ST-elevation MI (STEMI) or a non-ST elevation MI (NSTEMI) is the

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most common clinical classification for a myocardial infarction (NSTEMI). These are based on ST elevation, which is a visual representation of a part of a heartbeat recorded on an ECG. STEMIs account for 25–40% of all myocardial infarctions. There is also a more explicit classification system that was developed in 2012 based on international consensus [4-5].

Discussion

Treatment for a MI must begin as soon as possible. For a suspected MI, aspirin is a good first line treatment. Opioids and nitroglycerin can alleviate chest pain, but they do not improve outcomes overall. Those experiencing shortness of breath or low oxygen levels should take extra oxygen. There are two treatment options for STEMI: thrombolysis, which involves removing the blockage with drugs, or percutaneous coronary intervention (PCI), which involves forcing the arteries open and possibly stenting them. Heparin is usually given to people who have a non-ST elevation myocardial infarction (NSTEMI), and PCI is done in high-risk patients. Coronary artery bypass surgery (CABG) may be preferred to angioplasty for diabetic patients with multiple coronary artery blockages. Lifestyle modifications and long-term medication with aspirin, beta blockers, and statins are frequently recommended following a MI.

Risk factors Aging, active smoking, high blood pressure, diabetes mellitus, and elevated levels of total cholesterol and high-density lipoprotein are the most common risk factors for myocardial infarction. A family history of myocardial infarction, obesity, and alcohol consumption are all risk factors for myocardial infarction. Male sex is also a risk factor. Myocardial infarction is most frequently brought on by coronary artery disease. Myocardial risk variables are typically incorporated into risk factor stratification scores like the Framingham Risk Score. Men are more likely than women to develop cardiovascular disease at any age. All known risk factors include high triglycerides and high blood cholesterol, particularly high low-density lipoprotein and low high-density lipoprotein.

Conclusion

The most significant of the myocardial infarction risk factors is smoking cigarettes (including secondhand smoke). Obesity is thought to be the cause of 20% of coronary artery disease, while smoking is believed to be the cause of 36% of the disease. 7–12 percent of cases have been linked to a lack of physical activity. The less common causes of stress are persistently high levels of stress and job stress, which account for about 3% of cases.

Acknowledgement

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Conflict of Interest

None

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