

EMERGENCY CARE AND TREATMENT STRATEGIES FOR MYOCARDIAL INFARCTION

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Abstract: This article provides a comprehensive overview of the causes, pathogenesis, clinical symptoms, principles of emergency care, and modern treatment strategies for myocardial infarction. Myocardial infarction is one of the leading causes of death and disability worldwide. The correct and rapid organization of emergency care plays an important role in saving the patient's life. The effectiveness of modern treatment methods - thrombolytic therapy, percutaneous coronary intervention (PCI), anticoagulant and antiplatelet therapies - is scientifically analyzed. Attention is also paid to the areas of rehabilitation and prevention.

Keywords: Myocardial infarction, emergency care, reperfusion therapy, PCI, rehabilitation.

Myocardial infarction (MI) is a condition of necrosis resulting from a sudden cessation of blood supply to the heart muscle, mainly due to thrombosis of the coronary arteries. According to the World Health Organization (WHO), more than 17 million people die every year worldwide from cardiovascular diseases, and a large part of them are myocardial infarction. This article discusses strategies for early detection, emergency care, and effective treatment of myocardial infarction. Causes and pathogenesis of myocardial infarction; The main cause of myocardial infarction is the blockage of the lumen of the coronary arteries by a thrombus. This is accompanied by: Rupture of atherosclerotic plaque, Activation of platelets, Fibrin accumulation, and cessation of blood flow. Ischemia and necrosis play a key role in pathogenesis. The heart muscle, deprived of blood supply, undergoes irreversible changes within 20–40 minutes. Clinical signs and diagnosis; The main clinical signs of myocardial infarction include: Severe, sudden retrosternal pain (lasting more than 20 minutes). The pain may radiate to the left arm, shoulder, jaw, and back. Cold sweat, feeling of fear, shortness of breath. Decreased blood pressure and arrhythmias. Diagnostic methods: Electrocardiography (ECG) - elevation or depression of the ST segment. Biochemical markers - troponin I and T, creatine phosphokinase (CK-MB). Echocardiography - assessment of the contractile ability of the heart muscle. Principles of emergency care; Emergency care for myocardial infarction is carried out based on the rule of the “Golden Hour” (first 60 minutes).

This includes:

1. Opening the airway and oxygen therapy.
2. Pain relief – morphine or nitroglycerin.
3. Antiplatelet therapy – aspirin (160–325 mg).
4. Anticoagulants – heparin or enoxaparin.
5. Reperfusion therapy – thrombolytic drugs (streptokinase, alteplase).
6. Emergency transport – delivery to a center where PCI is performed.

Modern treatment strategies The main goal in myocardial infarction is to restore coronary blood flow and limit the necrosis process. 1. Pharmacological treatment Antiplatelet agents: Aspirin,

clopidogrel. Anticoagulants: Heparin, fondaparinux. Beta-blockers: To reduce cardiac work. ACE inhibitors and ARBs: To prevent heart failure. Statins: To lower cholesterol and prevent atherosclerosis. 2. Invasive treatment Percutaneous coronary intervention (PCI): Balloon angioplasty, stent placement. Coronary artery bypass grafting (CABG): In severe cases. Physical rehabilitation: Gradual restoration of heart function. Diet: Reducing fat and cholesterol. Quitting smoking and alcohol. Regular monitoring of blood pressure and glucose. Psychological support and stress reduction. A healthy lifestyle, regular medical examinations, and regular medication are important for prevention.

Conclusion

Myocardial infarction is a life-threatening condition, and prompt diagnosis and emergency care are crucial to saving the patient's life. Modern treatment strategies, in particular, PCI and pharmacological therapy, are highly effective. Rehabilitation and preventive measures play an important role in preventing re-infarctions.

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