

Acute ST-Segment Elevation Myocardial Infarction: Critical Care Perspective

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Over 1.2 million patients suffer from new or recurrent ischemic events annually [1]. This includes an estimated 565,000 cases of first and 300,000 cases of recurrent myocardial infarction (MI) [1]. Although mortality from acute MI has declined in recent years, it still remains high at 25% to 30% [1]. Despite its high mortality, prognosis can be improved with timely and effective use of evidence-based treatment in the acute setting [2]. This review outlines the critical care management strategies for ST-segment MI (STEMI).

Etiology of STEMI

The most common cause of STEMI is acute plaque rupture and the resultant thrombosis leading to acute closure of coronary arteries. Less commonly, STEMI is caused by abnormalities of coronary vessels, wall, hypercoagulation, and substance abuse as listed in Box 1 [3].

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Box 1. Nonatherosclerotic etiologies of acute myocardial infarction*Arteritis*

Takayasu's disease
Polyarteritis nodosa
Kawasaki syndrome
Systemic lupus erythematosus
Rheumatoid arthritis
Ankylosing spondylitis

*Trauma to coronary arteries**Metabolic diseases with involvement of coronary arteries*

Hurler's syndrome
Homocystinuria
Fabry's disease
Amyloidosis

Other mechanisms of luminal narrowing

Spasm
Aortic dissection involving coronary arteries

Coronary artery emboli

Infective endocarditis
Nonthrombotic endocarditis
Prosthetic valve emboli
Cardiac myxoma
Paradoxical emboli
Papillary fibroelastoma of aortic valve

Congenital anomalies

Anomalous origin of the left coronary from the pulmonary artery
Left coronary artery from anterior sinus of valsalva

Miscellaneous

Carbon monoxide poisoning
Polycythemia vera
Thrombocytosis
Cocaine abuse

Data from Cheitlin MD, McAllister HA, de Castro CM. Myocardial infarction without atherosclerosis. JAMA 1975;231:951-9.

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