

Acute myocardial infarction with ST elevation



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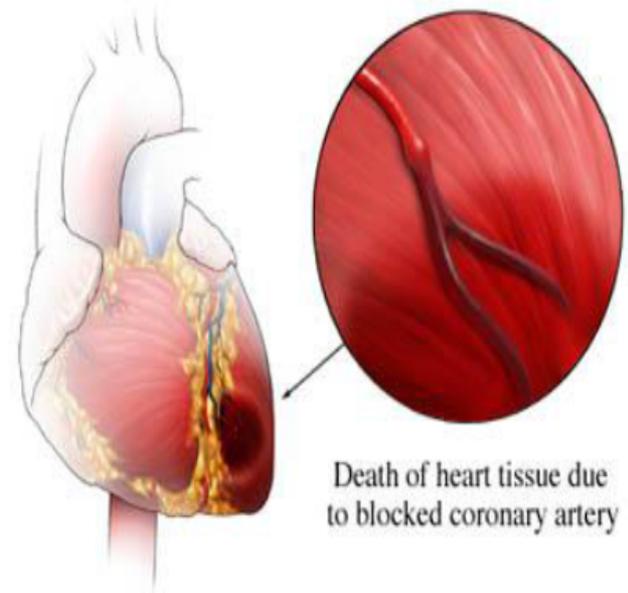
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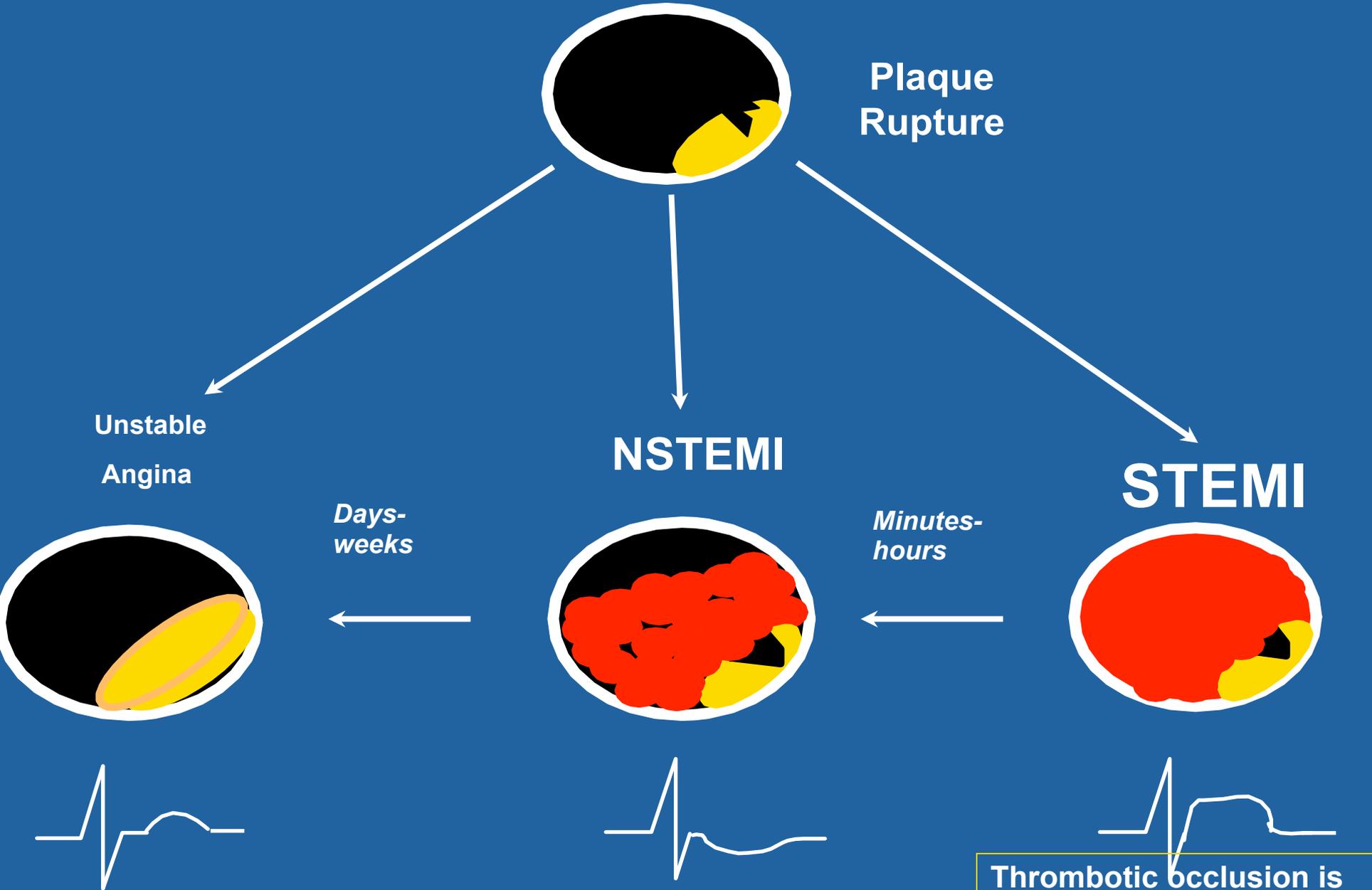
Definition of Myocardial Infarction

Pathology

Acute myocardial infarction is defined as myocardial cell death due to prolonged myocardial ischemia



Terminology in ACS



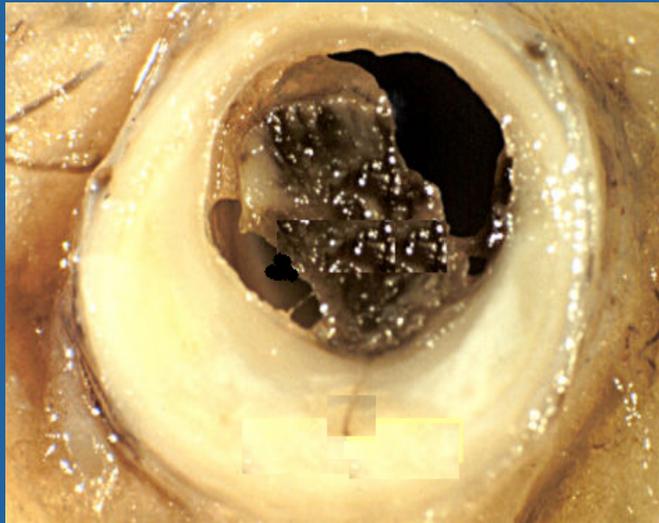
Thrombotic occlusion is the most common cause

Acute coronary syndromes

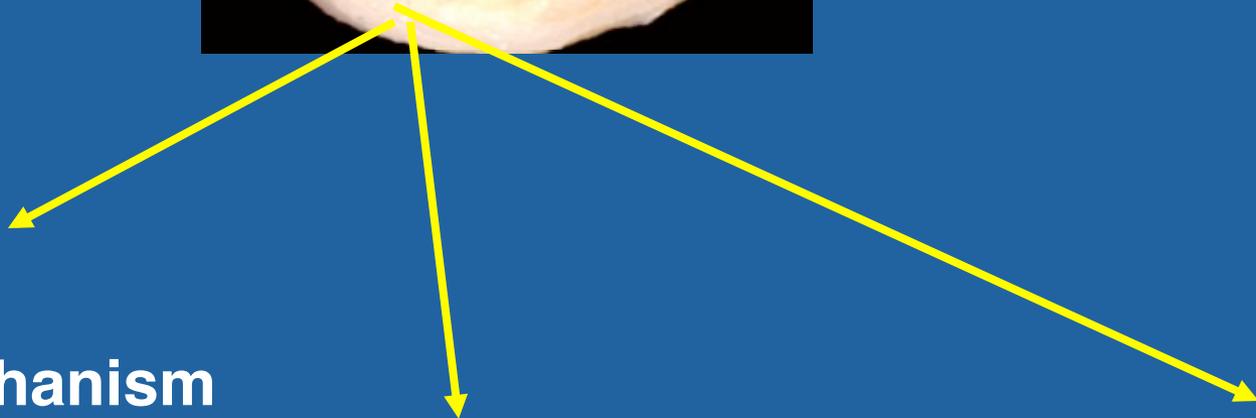
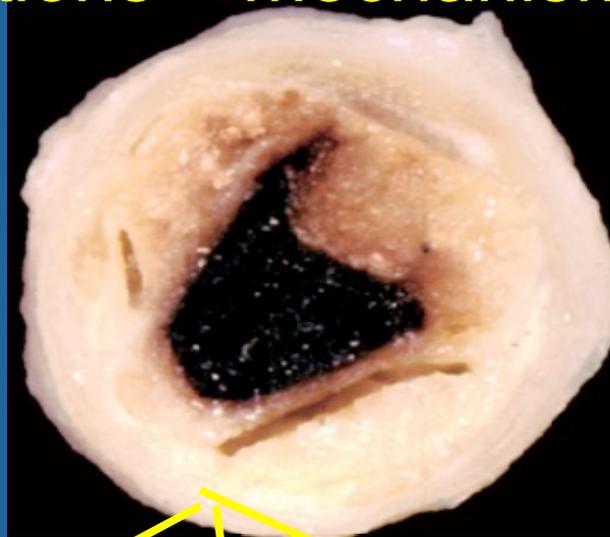
STEMI



NSTEMI



Acute Coronary Occlusion complications – mechanism of death



Electrical mechanism
Ventricular fibrillation

prehospital phase

Heart Failure

hospital phase

Mechanical Complications

Admission

Chest pain

Working diagnosis

Acute Coronary Syndrome

ECG

ST-elevation

Non ST-elevation*

Bio-chemistry

Tn(+)

Tn(+)

Tn(-)

Final diagnosis

STEMI, NSTEMI

Unstable angina

* ST depression

Sequential ECG changes following acute MI



Criteria for Acute Myocardial Infarction

- Detection of a rise and/or fall of cardiac biomarker values (preferably cardiac troponin) with at least one value above the 99th percentile upper reference limit and with at least one of the following:
- Ischemic symptoms
- ECG changes of new ischemia (new ST-T changes or new LBBB)
- Development of pathologic Q waves in the ECG
- Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality
- Identification of an intracoronary thrombus by angiography or autopsy

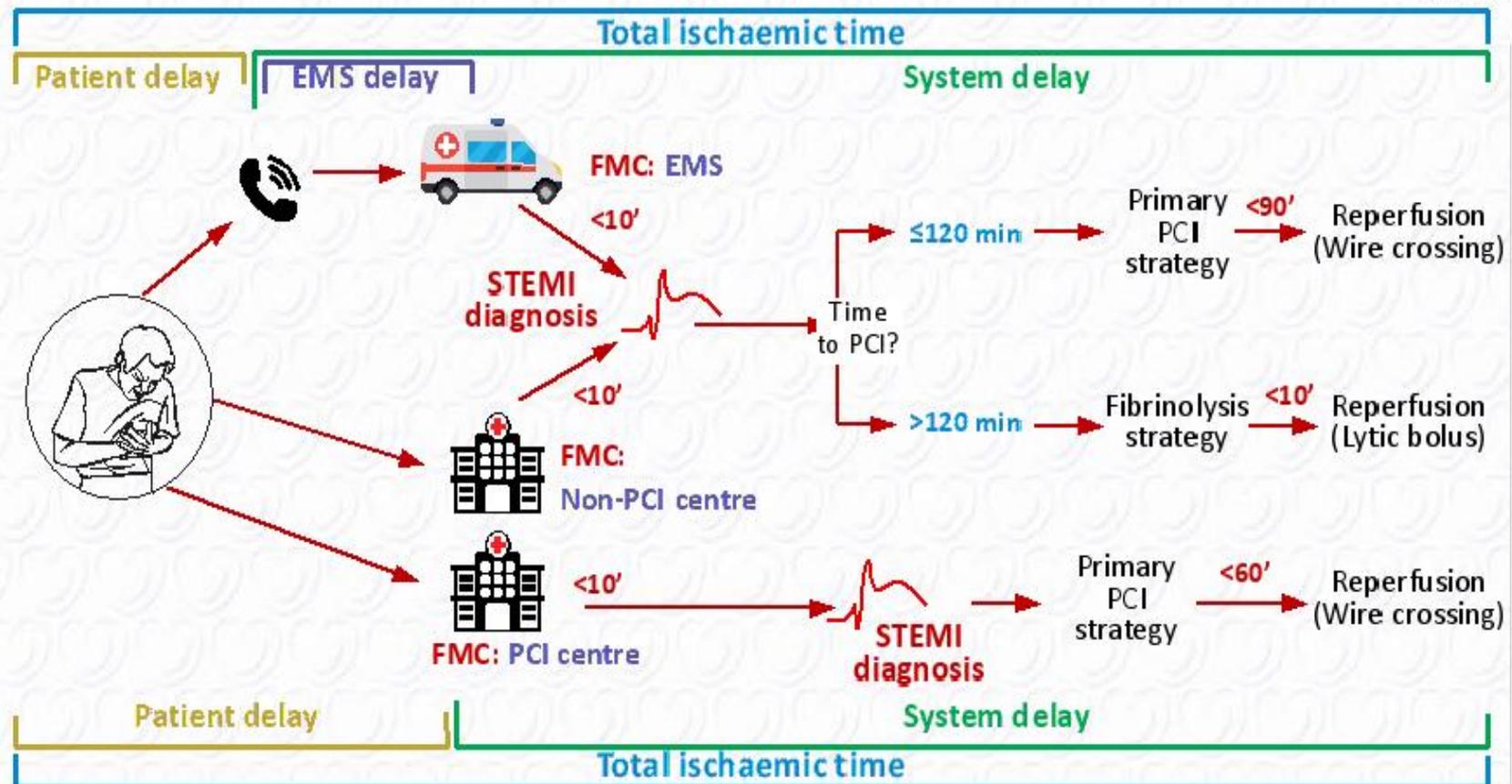
Reperfusion therapy

All STEMI patients should undergo rapid evaluation for reperfusion therapy and have a reperfusion strategy implemented promptly after contact with the medical system.

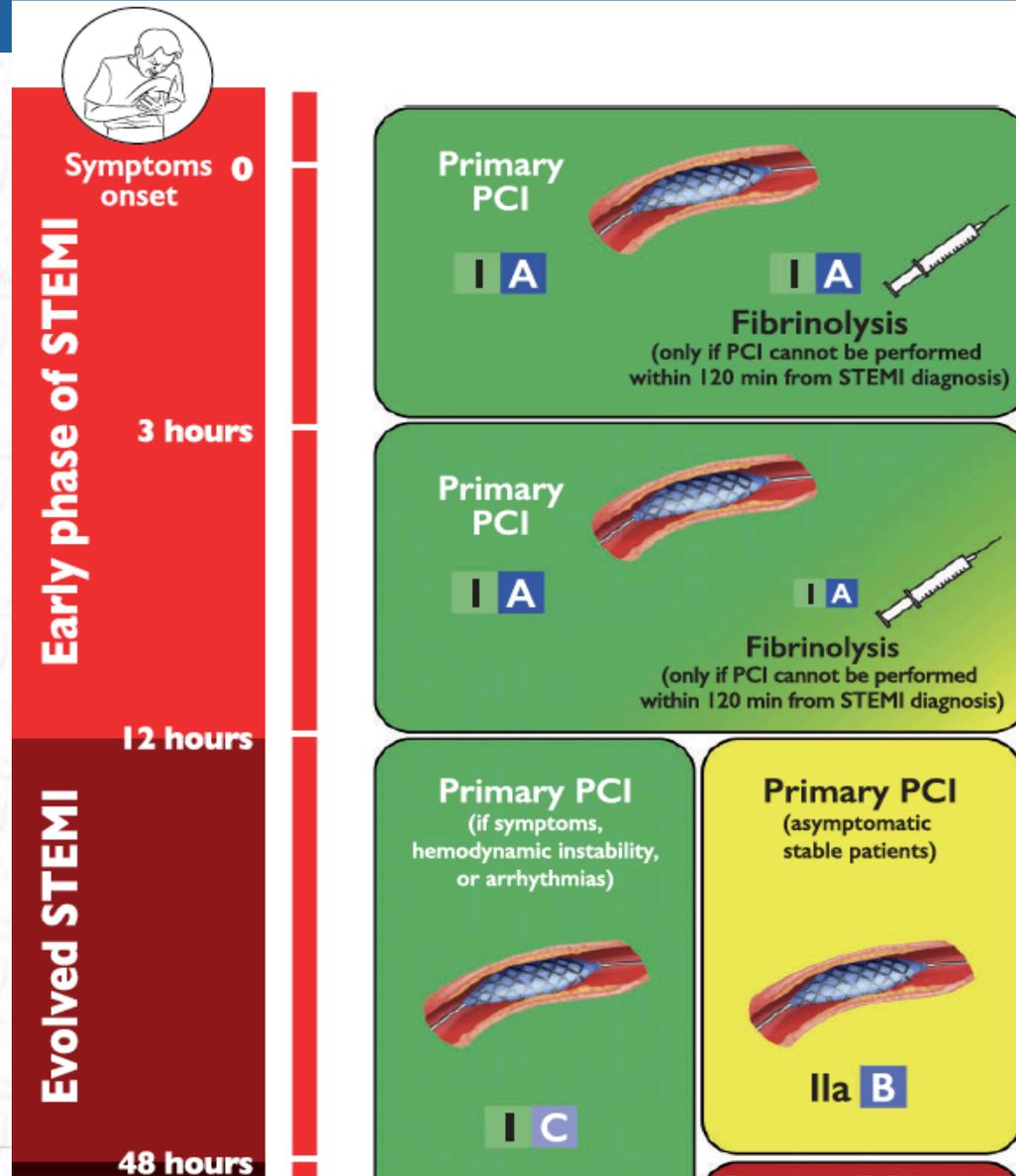
Primary PCI

***Fibrinolytic
therapy***

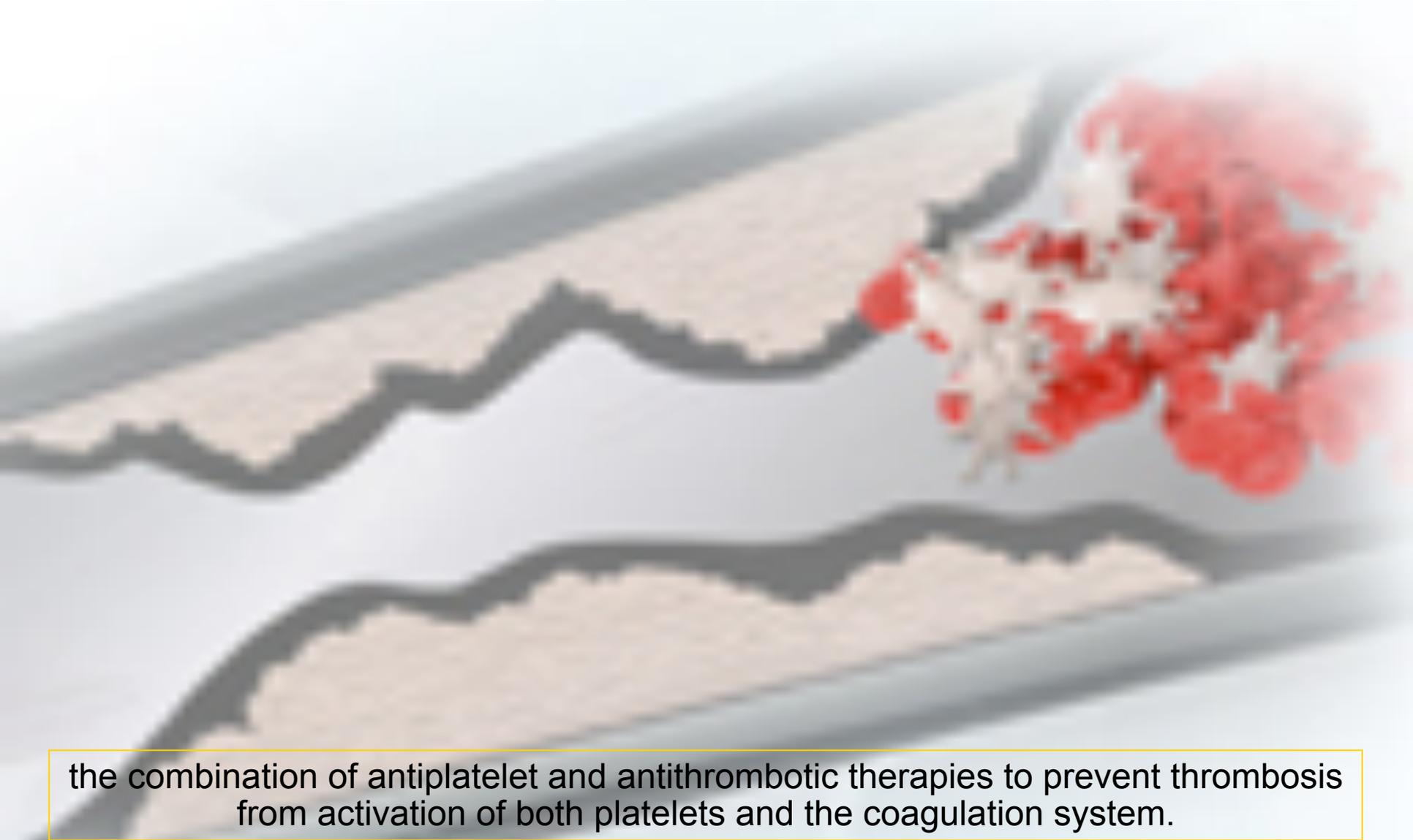
Modes of patient presentation, components of ischaemic time and flowchart for reperfusion strategy selection



Reperfusion strategies in the infarct-related artery according to time from symptoms onset



STEMI: obstruction of a coronary artery by a thrombus overlying atherosclerotic plaque



the combination of antiplatelet and antithrombotic therapies to prevent thrombosis from activation of both platelets and the coagulation system.

Periprocedural and post-procedural antithrombotic therapy in patients undergoing primary PCI

- A potent P2Y₁₂ inhibitor (prasugrel or ticagrelor), or clopidogrel if these are not available or are contraindicated, is recommended before (or at latest at the time of) PCI and maintained over 12 months, unless there are contraindications such as excessive risk of bleeding
- Aspirin (oral or i.v. if unable to swallow) is recommended as soon as possible for all patients without contraindications
- Anticoagulation is recommended for all patients in addition to antiplatelet therapy during primary PCI (UFH or enoxaparin or bivalirudin).

Secondary Prevention

- Ask, advise, assess, and assist pts to stop smoking
- LDL-C < 70 mg/dL (statin goal)
- BP control: <140/90 mmHg or <130/80 mmHg if pt have diabetes or chronic kidney disease.
- Daily physical activity 30 min 5 d/wk
- Annual influenza immunization

Post STEMI patient - long term therapy

Pharmacological treatment:

Aspirin

Ticagrelor or Prasugrel or Clopidogrel

Statin

Beta-blocker

ACE inhibitor/ARB

Aldosterone blocker

160 invasive centers with 24h duty of AMI therapy pPCI in 90% of STEMI

