ACVC
Association for
Acute CardioVascular Care

Edition 2025

CLINICAL DECISION MAKING TOOLKIT

Instant guidance for diagnosis, risk stratification and management

ESC
European Society
of Cardiology

ACVC
Association for
Acute CardioVascular Care

The Clinical Decision Making Toolkit

is produced by the Association for Acute CardioVascular Care (ACVC) of the European Society of Cardiology (ESC).

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The Association for Acute CardioVascular Care

Clinical Decision-Making TOOLKIT

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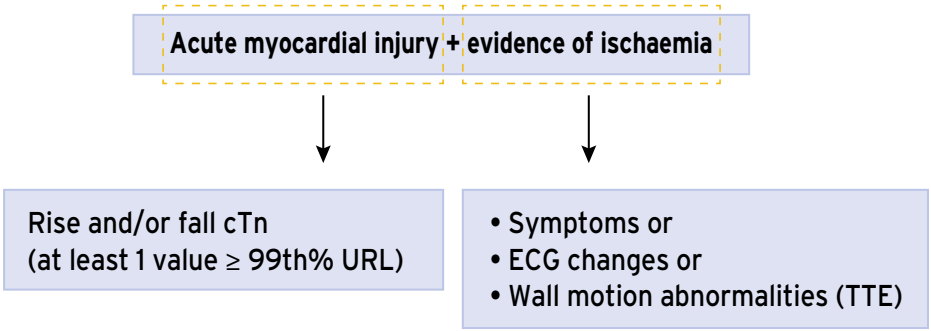
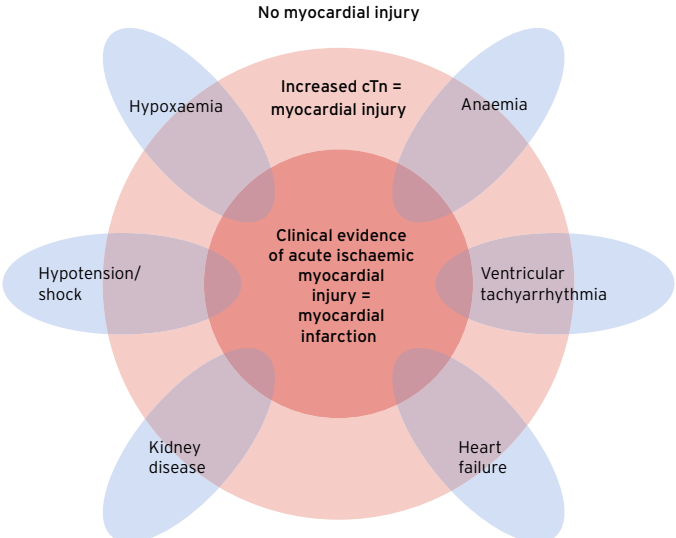
ACUTE CORONARY SYNDROMES

MI definition

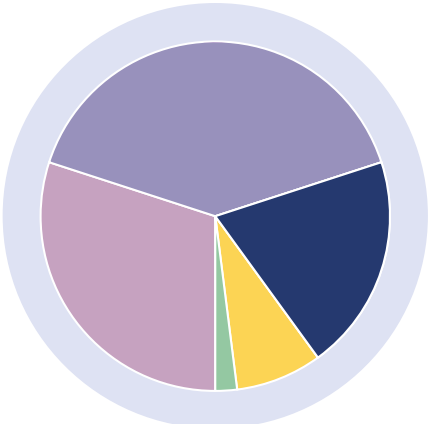


MI definition: pathophysiology



Fourth universal definition of myocardial infarction (2018) European Heart Journal, Volume 40, Issue 3, 14 January 2019, Pages 237-269,Figure 2

Myocardial injury: aetiology



CARDIAC

NON CORONARY

HF
Myocarditis
TakoTsubo
Cardiomyopathy
LVH/RVH

Tachyarrhythmia
Bradyarrhythmia

CORONARY

Plaque erosion
Thrombus

Vasospasm
Embolism
Dissection

PCI | CABG

NON-CARDIAC

DIRECT INJURY

PE
Sepsis
Chemotherapy
Infiltrative disease
PH

INDIRECT INJURY

Subarachnoid haemorrhage
Burn/exertion
Critical illness

Shock
Hypertension
Anaemia
Hypoxemia
Stroke

Myocardial injury
Type 1 MI
Type 2 MI
Type 3 MI
Type 4 MI
Type 5 MI

MI definition: classification

TYPE 1

Plaque rupture/erosion with occlusive thrombus

Plaque rupture/erosion with non occlusive thrombus

TYPE 2

Atherosclerosis and oxygen supply /demand imbalance

Vasospasm or coronary microvascular dysfunction

Coronary dissection

Oxygen supply/demand imbalance

MI definition: classification

TYPE 3

Cardiac death AND symptoms of ischaemia or MI detected by autopsy
Accompanied by new ischaemic ECG changes or ventricular fibrillation

TYPE 4

4a MI: PCI-related MI (≤48h after)
Normal pre-PCI cTn values: ↑x5 p99th URL.
Elevated pre-PCI cTn: x5 99th% URL + rise >20%

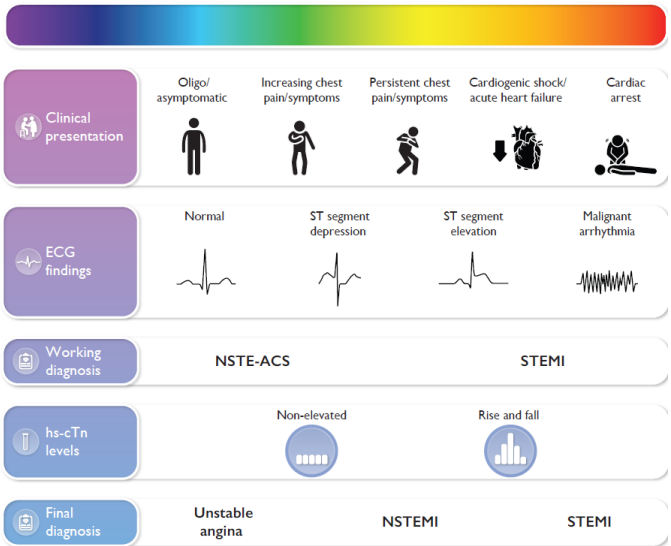
4b MI: stent/scaffold thrombosis

4c MI: stent stenosis

TYPE 5

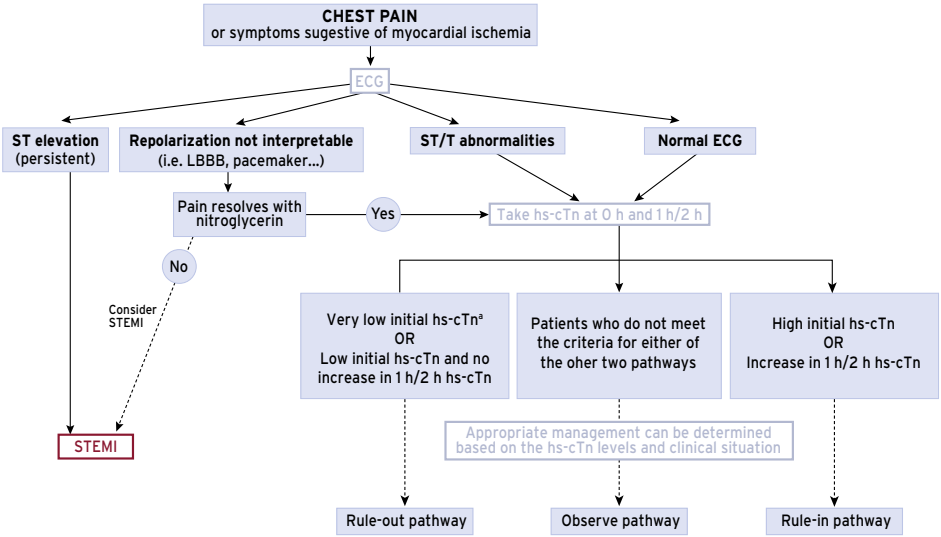
MI associated with CABG (≤48h after)
Normal pre- CABG cTn values: ↑x10 p99th URL.
Elevated pre-CABG cTn: ↑x10 p99th URL + ↑ >20%

THE ACUTE CORONARY SYNDROMES SPECTRUM



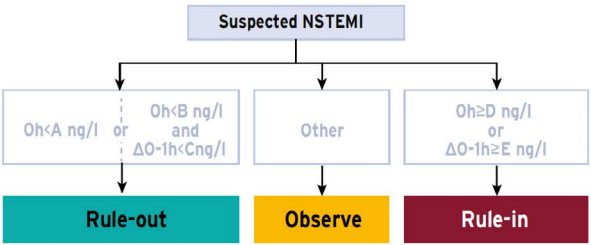
2023 ESC Guidelines for the management of acute coronary syndromes European Heart Journal, Volume 44, Issue 38, 7 October 2023, Pages 3720–3826
Figure 2

THE ACUTE CORONARY SYNDROMES SPECTRUM



Collet JP. Eur Heart J 2020 Ibañez B. Eur Heart J 2018; 39:119-177.

ACUTE CORONARY SYNDROMES: Diagnosis
0-1 H rule-in & rule out test for NSTEMI



	A	B	C	D	E
hs-cTnT (Elecsys)*	5	12	3	52	5
hs-cTnI (Architect)*	2	5	2	52	6
hs-cTnI (Dimension Vista)*	0,5	5	2	107	19

*Cut-off levels are assay-specific.

- NSTEMI can be ruled-out at presentation, if hs-cTn concentration is very low
- NSTEMI can be ruled out by the combination of low baseline levels and the lack of a relevant increase within 1h
- NSTEMI is highly likely if initial hs-cTn concentration is at least moderately elevated or hs-cTn concentrations show a clear rise within the first hour

Causes of repolarisation abnormalities in the ECG not related to ACS

ST-segment elevation

Fixed
- LV aneurysm
- LBBB, WPW, hypertrophic cardiomyopathy, LVH
- Pacemaker stimulation
- Early repolarisation (elevated J-point)

Dynamic
- Acute (myo)pericarditis
- Pulmonary embolism
- Electrolyte disturbances (hyperkalemia)
- Acute brain damage (stroke, subarachnoid haemorrhage)
- TakoTsubo syndrome

Negative T waves

- Normal variants, i.e. women (right precordial leads), children, teenagers
- Evolutive changes post myocardial infarction
- Chronic ischemic heart disease
- Acute (myo)pericarditis, cardiomyopathies
- BBB, LVH, WPW
- Post-tachycardia or pacemaker stimulation
- Metabolic or ionic disturbances

ST-segment depression

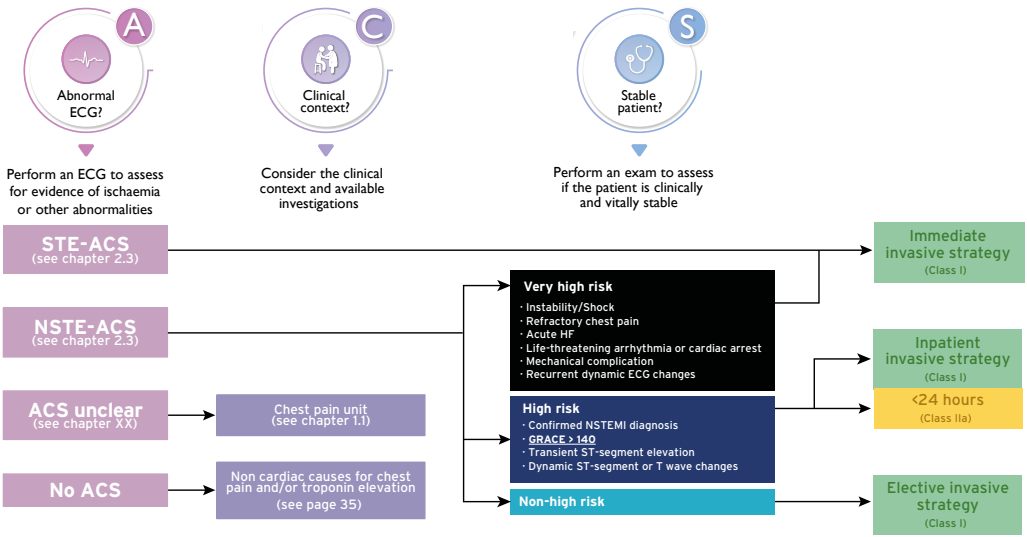
Fixed
- Abnormal QRS (LBBB, WPW, pacemaker stimulation...)
- LVH, hypertrophic cardiomyopathy
- Chronic ischemic heart disease

Dynamic
- Acute (myo)pericarditis
- Acute pulmonary hypertension
- Electrolyte disturbances (hyperkalemia)
- Intermitent LBBB, WPW, pacing
- Post-tachycardia / cardioversion
- Severe hypertensive crisis
- Drug effects (digoxin)
- Shock, pancreatitis
- Hyperventilation
- TakoTsubo syndrome

Prominent T waves

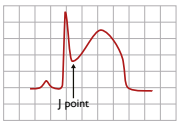
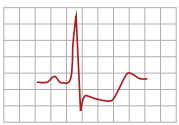
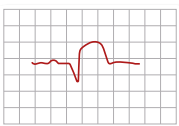
- Normal variants, i.e. early repolarisation
- Metabolic or ionic disturbances (i.e. hyperkalemia)
- Acute neurological damage (stroke, subarachnoid haemorrhage)

Suspected ACS: General approach

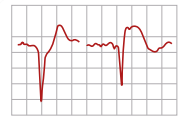
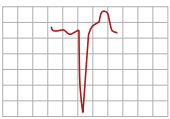


Adapted from 2023 ESC Guidelines for the management of acute coronary syndromes European Heart Journal, Volume 44, Issue 38, 7 October 2023, Pages 3720–3826 Figure 5

HIGH RISK FOR ACUTE CORONARY SYNDROME ECG PATTERNS(1)

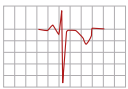
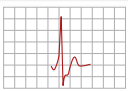
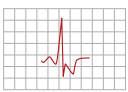
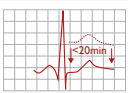
ECG pattern	Criteria	Signifying	Figure
i STEMI	New ST-elevation at the J-point in ≥ 2 contiguous leads[a] ≥2.5 mm in men <40 years, ≥2 mm in men ≥40 years, or ≥1.5 mm in women regardless of age in leads V2–V3 and/or ≥1 mm in the otherleads (in the absence of LV hypertrophy or left bundle branch block) [a]Including V3R and V4R	Ongoing acute coronary artery occlusion	
ii Posterior STEMI	ST-segment depression in leads V1–V3, especially when the terminal T-wave is positive (ST-segmentelevation equivalent), and concomitant ST-segment elevation ≥0.5 mm recorded in leads V7–V9	Posterior STEMI	 V1-V3
iii LCx occlusion/ right ventricular MI	ST-segment elevation in V7–V9 and V3R and V4R, respectively	Left circumflex (LCX) artery occlusion or right ventricular MI	 V7-V9, V3R and V4R

HIGH RISK FOR ACUTE CORONARY SYNDROME ECG PATTERNS(2)

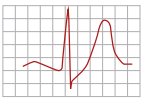
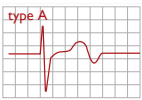
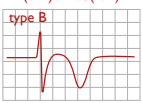
ECG pattern	Criteria	Signifying	Figure
iv Multivessel ischaemia/ left main obstruction	ST depression ≥ 1mm in six or more surface leads (inferolateral ST depression), coupled withST-segment elevation in aVR and/or V1	Multivessel ischaemia or left main coronary artery obstruction, particularly if the patient presents with haemodynamic compromise	
v Left bundle branch block/ paced rhythm	QRS duration greater than 120 ms Absence of Q wave in leads I, V5 and V6 Monomorphic R wave in I, V5 and V6 ST and T wave displacement opposite to the major deflection of the QRS complex	Patients with a high clinical suspicion of ongoing myocardial ischaemia should be managed in a similar way to STEMI patients	
vi Right bundle branch block	QRS duration greater than 120 ms rsR' "bunny ear" pattern in the anterior precordial leads (leads V1-V3) Slurred S waves in leads I, aVL and frequently V5 and V6	Patients with a high clinical suspicion of ongoing myocardial ischaemia should be managed in a similar way to STEMI patients	

Adapted from 2023 ESC Guidelines for the management of acute coronary syndromes European Heart Journal, Volume 44, Issue 38, 7 October 2023, Pages 3720–3826 Figure S2

HIGH RISK FOR ACUTE CORONARY SYNDROME ECG PATTERNS(3)

ECG pattern	Criteria	Signifying	Figure
a Isolated T-wave inversion	T-wave inversion >1 mm in ≥5 leads including I, II, aVL, and V2–V6	Only mildly impaired prognosis	 I, II, aVL,or V2 to V6
b ST-segment depression	J point depressed by ≥ 0.5 mm in leads V2 and V3 or≥ 1 mm in all other leads followed by a horizontal or downsloping ST-segment for ≥ 0.08 s in ≥1 leads (except aVR)	More severe ischaemia	 ≥ 1 leads  ≥ 1 leads
c Transient ST-segment elevation	ST segment elevation in ≥2 contiguous leads of ≥2.5 mm in men <40 years, ≥2 mm in men ≥ 40 years, or ≥1.5 mm in women regardless of age in leads V2–V3 and/or ≥1 mm in the other leads lasting <20 min	Only mildly impaired prognosis	 ≥ 2 contiguous leads

HIGH RISK FOR ACUTE CORONARY SYNDROME ECG PATTERNS(4)

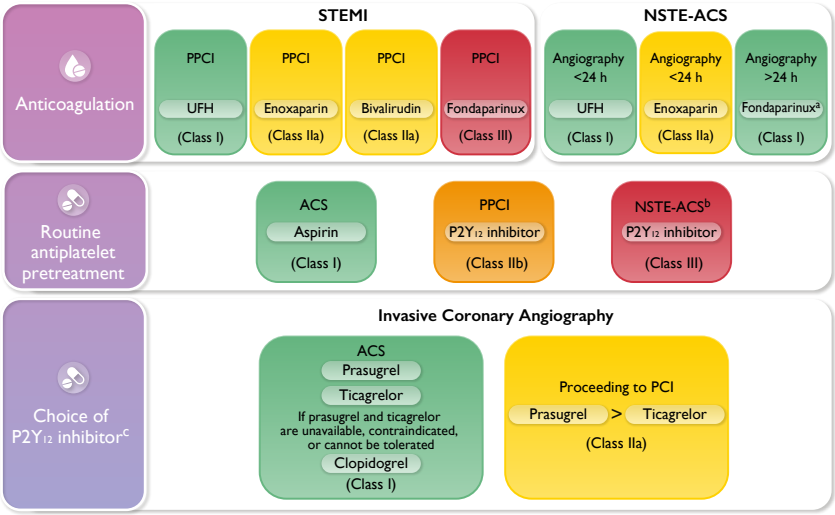
d De Winter ST-T	1–3 mm upsloping ST-segment depression at the J point in leads V1–V6 that continue into tall, positive, and symmetrical T waves	Proximal LAD occlusion/ severe stenosis	 V1–V6
e Wellens sign	Isoelectric or minimally elevated J point (<1 mm) + biphasic T wave in leads V2 and V3 (type A) or symmetric and deeply inverted T waves in leads V2 and V3, occasionally in leads V1, V4, V5, and V6 (type B)	Proximal LAD occlusion/ severe stenosis	 type A (V1-)V2-V3(-V4)  type B (V1-)V2-V3(-V4)

Adapted from 2023 ESC Guidelines for the management of acute coronary syndromes European Heart Journal, Volume 44, Issue 38, 7 October 2023, Pages 3720–3826 Figure S3

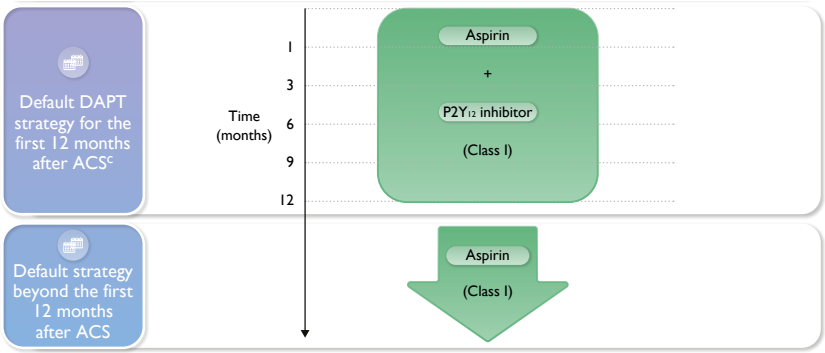
ACUTE CORONARY SYNDROMES: Differential Diagnosis

Causes of chest pain Not related to ACS	Causes of troponin elevation Not related to ACS
Primary cardiovascular • Acute pericarditis, pericardial effusion • Acute myocarditis • Severe hypertensive crisis • Stress cardiomyopathy (TakoTsubo syndrome) • Hypertrophic cardiomyopathy, aortic stenosis • Severe acute heart failure • Acute aortic syndrome (dissection, hematoma) • Pulmonary embolism, pulmonary infarction • Cardiac contusion	**Primary cardiovascular** • Acute myo(peri)carditis • Severe hypertensive crisis • Pulmonary edema or severe congestive heart failure • Stress cardiomyopathy (TakoTsubo syndrome) • Post- tachy- or bradyarrhythmias • Cardiac contusion or cardiac procedures (ablation, cardioversion, or endomyocardial biopsy) • Aortic dissection, aortic valve disease or hypertrophic cardiomyopathy • Pulmonary embolism, severe pulmonary hypertension
Primary non-cardiovascular • Oesophageal spasm, oesophagitis, Gastro Esophageal Reflux (GER) • Peptic ulcer disease, cholecystitis, pancreatitis • Pneumonia, bronchitis, asthma attack • Pleuritis, pleural effusion, pneumothorax • Thoracic trauma • Costochondritis, rib fracture • Cervical / thoracic vertebral or discal damage • Herpes Zoster	**Primary non-cardiovascular** • Renal dysfunction (acute or chronic) • Critical illness (sepsis, repiratory failure...) • Acute neurological damage (i.e. stroke, subarachnoid hemorrhage) • Severe burns (affecting >30% of body surface area) • Rhabdomyolysis • Drug toxicity (chemotherapy with adriamycin, 5-fluorouracil, herceptin, snake venoms...) • Inflammatory or degenerative muscle diseases • Hypothyroidism • Infiltrative diseases (amyloidosis, hemochromatosis, sarcoidosis) • Scleroderma

NSTE-ACS: Treatment (1)
General overview

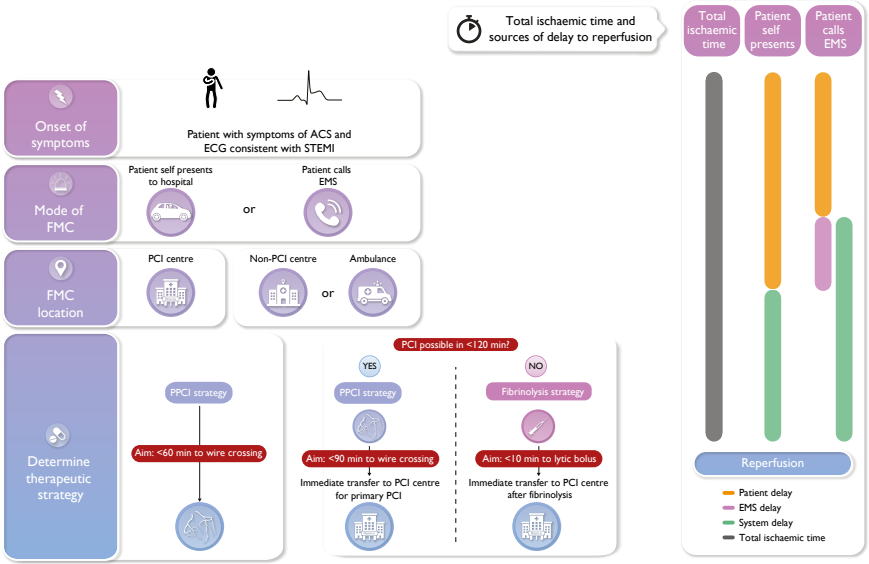


NSTE-ACS: Treatment (2)
General overview



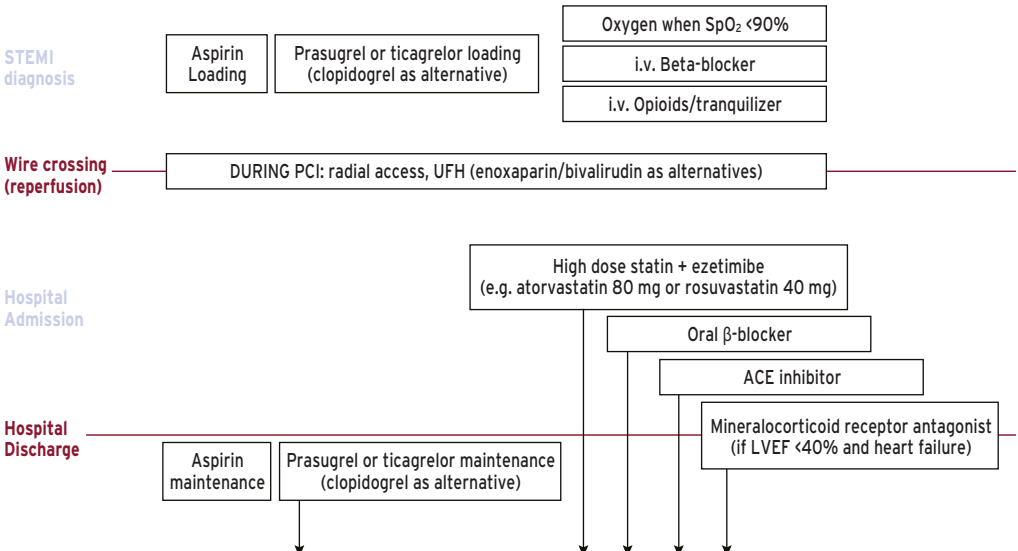
2023 ESC Guidelines for the management of acute coronary syndromes European Heart Journal, Volume 44, Issue 38, 7 October 2023, Pages 3720–3826 Figure 10

Timing and treatment of choice in STEMI

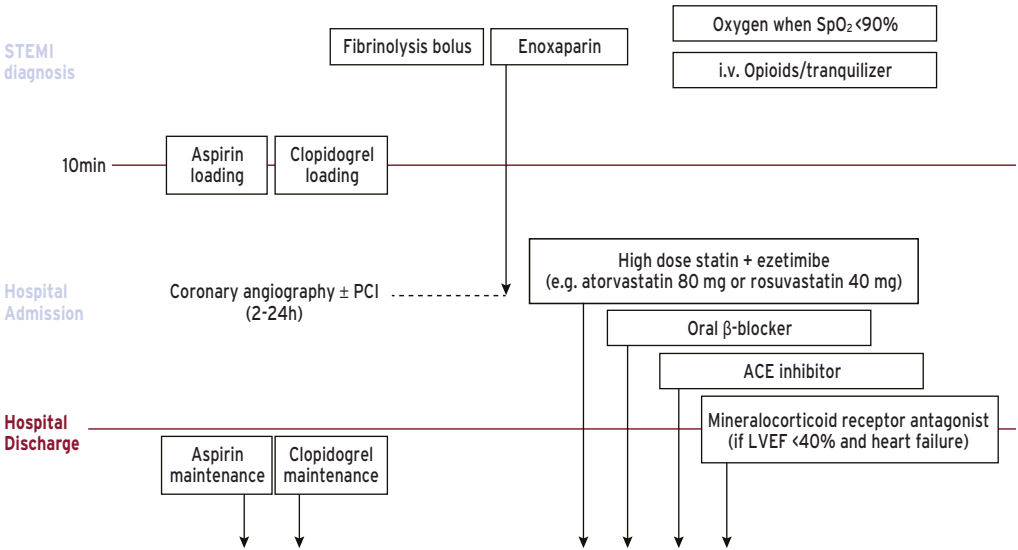


2023 ESC Guidelines for the management of acute coronary syndromes European Heart Journal, Volume 44, Issue 38, 7 October 2023, Pages 3720–3826 Figure 7

STEMI Treatment (1): Medical management of patients treated with primary PCI



STEMI Treatment (2): Medical management of patients treated with fibrinolysis



MINOCA

MINOCA is a working (often transitionary) diagnosis that needs further evaluation in a patient presenting with symptoms suggestive of ACS.

It is an umbrella term encompassing a differential diagnosis of cardiac (coronary and non-coronary) and non-cardiac causes.

MINOCA DIAGNOSTIC CRITERIA

1. Acute myocardial infarction criteria

a. Rise and/or fall in serial cardiac troponin

b. Clinical evidence of infarction with at least one:

- Symptoms of ischaemia
- New ST-T changes or new LBBB
- Pathological Q waves
- New RWMAs
- Intracoronary thrombus on angiography or at autopsy

2. No Coronary stenosis>/=50% in any potential infarct-related artery.

3. At the time of angiography, the specific diagnosis for the clinical presentation is not apparent.

EPIDEMIOLOGY

MINOCA remains under-diagnosed and under-treated

1-14% of all patients presenting with an ACS that undergo angiography.

10-15% females and 3-4% males presenting with ACS.

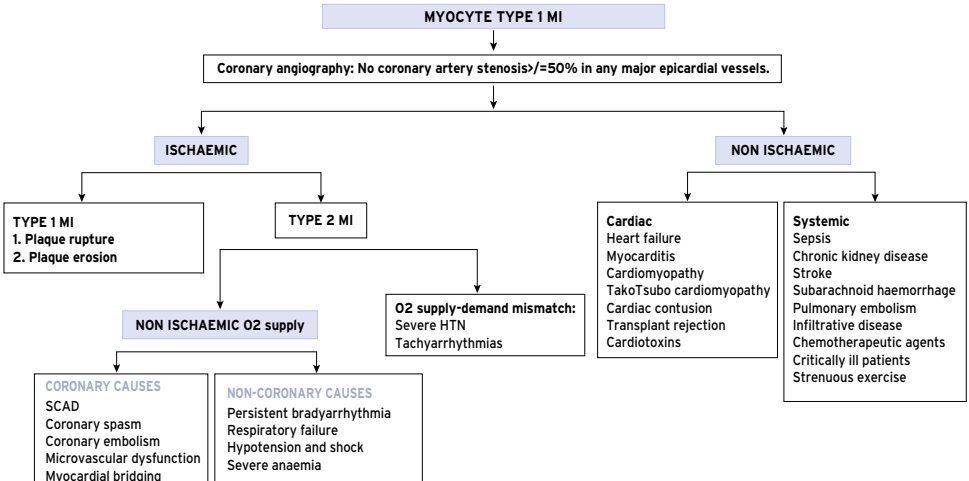
MORBIDITY & MORTALITY

When matched for age and sex with healthy individuals, MINOCA patients have worse survival and a substantial risk of repeated events.

5% 1-year mortality and 11% 5-year mortality

The 4-year rate of major adverse cardiac events after MINOCA is 25%.

MYOCYTE INJURY



The MINOCA diagnostic algorithm

Cath Lab

- Good history taking and physical examination is key
- ECG assessment
- Invasive coronary angiogram +/-LV gram (Takutsubo and other cardiomyopathies)
- Intracoronary imaging with OCT (may be considered if plaque rupture/erosion or disection is suspected.)
- Functional assessment of coronary microvascular dysfunction +/-vasoreactivity may be considered if no cause identified.

Wards

- Blood tests including inflammatory markers, serial troponins, thrombophilia screen (coronary embolus) and consider viral serology (myocarditis)
- Echocardiography +/- bubble study
- Early Cardiac MRI if diagnosis still uncertain
- If no OCT done acutely, consider CTCA to look for atherosclerotic disease
- CTPA/CT brain
- Consider Cardiac PET for the assessment of CMD
- Ambulatory ECG monitoring (screening of Paroxysmal atrial fibrillation or vasospasm)

Individualised care

- Management as per final diagnosis
- Consider repeat cardiac MRI
- Cardiac Rehabilitation
- Mental health well-being and psychosocial support
- Long term care F/U clinic evaluation.

SCAD

DEFINITION

- Acute non-iatrogenic and non-traumatic separation of the coronary artery wall creating a false lumen, causing external compression of the true lumen and compromising coronary flow.
- Presenting as an Acute Coronary Syndrome, Myocardial infarction, Ventricular Arrhythmias or Sudden Cardiac Death.

EPIDEMIOLOGY

- Up to ~ 90% of patients are women between 47-53 years of age.
- Up to ~ 35% of MIs in women </=50 years of age.
- Pregnancy related SCAD (P-SCAD): 43% of acute myocardial infarctions related to pregnancy (predominantly post partum).
- Generally older women, at first childbirth and multigravidas.
- During pregnancy: peak of events in the 3º trimester.
- After pregnancy: Peaks in the first 4 weeks after delivery.

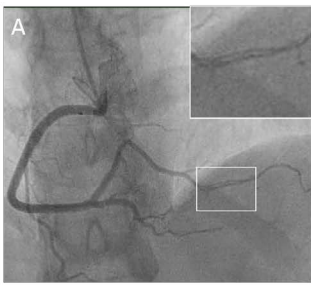
RISK FACTORS AND PRECIPITATING TRIGGERS

- Female sex
- Pregnancy, multiparity
- Hypertension
- Migraine
- Pulsatile tinnitus
- Fibromuscular dysplasia (both focal and multifocal) and EVAs*
- Connective tissue disorders and inherited arteriopathy (Vascular Ehlers-Danlos, Marfan's, Loeys-Dietz syndromes)
- Susceptibility genes associated with connective tissue function and tissue clotting.
- Adult polycystic Kidney disease.
- Perimenopausal
- Increased emotional stress
- Extreme physical and isometric exercise.

EVAs* = extra-coronary vascular abnormalities: aneurysms, dissections, irregularities, undulations, and/or tortuosity.

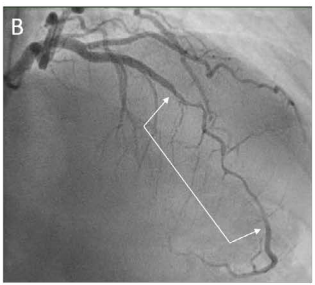
SACD: Angiographic classification (1)

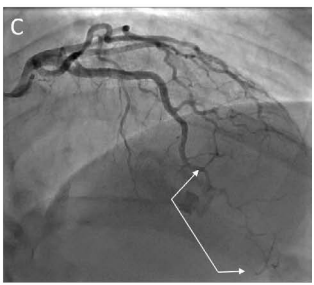
- SCAD typically occurs in the mid-to-distal segments of coronary arteries.
- The most affected vessel is the Left anterior descending artery.
- 10 to 15% of patients with SCAD have multivessel involvement.
- OCT helps confirm the diagnosis of SCAD.



Type 1 SCAD

- Multiple radiolucent lumens
- Contrast staining of the arterial wall
- Slow clearing of contrast or dye hang-up



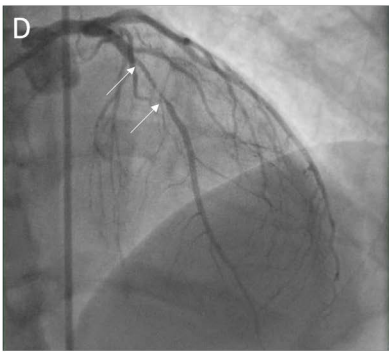


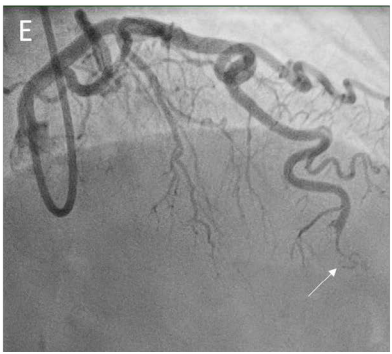
Type 2 SCAD: The most common type (60-75% of SCAD patients) Diffuse (typically >20 mm) smooth narrowing which appears as a sudden change in caliber of the artery. No response to intracoronary nitroglycerin and absence of atherosclerosis in other vessels.

Type 2A: Dissected artery between proximal and distal segments of normal caliber.

Type 2B: dissection which extends to the tip of the artery.

SACD: Angiographic classification (2)



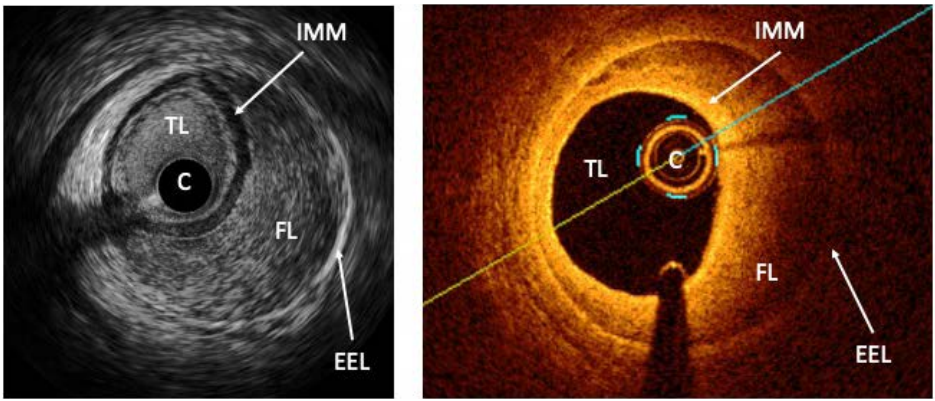


Type 3 SCAD: Hazy, linear, focal or tubular stenosis which mimics atherosclerosis and therefore difficult to diagnose. OCT to show the presence of intramural hematoma when diagnosis uncertain.
To be suspected when:
· Absence of atherosclerosis in other coronary arteries.
· Coronary tortuosity.

Type 4 SCAD: Abrupt complete occlusion of the vessel, usually involving the distal segment.
The dissection may be detected after the recanalization of the vessel or after a repeat coronary angiography shows healing of the vessel.

SCAD: Intracoronary imaging

Intracoronary imaging is essential when diagnosis is uncertain as diagnosis is critical in both the acute and long-term management of SCAD.

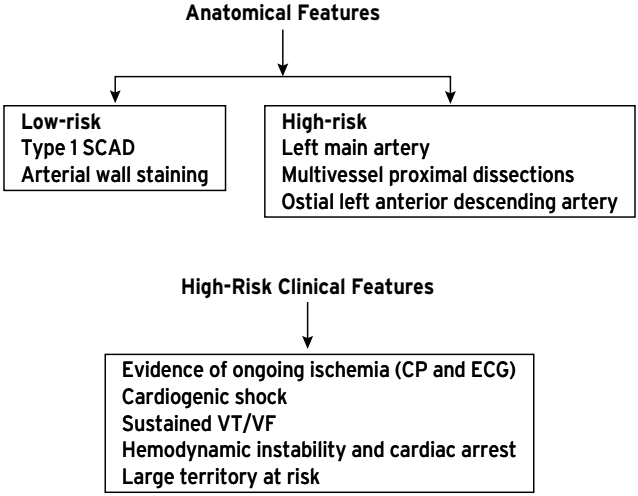


Classical Intracoronary imaging appearances in SCAD (left intravascular ultrasound, Right optical coherence tomography): C = imaging catheter, TL = true lumen, FL = False lumen IMM = intimal-medial membrane, EEL – external elastic lamina.

Management of SCAD

CONSERVATIVE MANAGEMENT

- Conservative therapy is the first line unless ongoing high-risk clinical features, as SCAD heals spontaneously and known poor outcome with PCI.
- Prolonged Inpatient stay >/= 5 days as there is a risk of extension.



REVASCULARIZATION

A very small proportion require revascularization in the presence of high-risk clinical features.

PCI

- Challenging for several reasons: Rate of complications > 30%
- Additional technical challenges due to increase tortuosity
- Risk of secondary iatrogenic dissection
- Multiple stents for long dissections
- Coronary wire positioning in the coronary false lumen
- Hematoma propagation (loss of distal-vessel patency or retrograde extension to more proximal vessels)
- Risk of malapposition in the long period as a result of intramural hematoma reabsorption. However, stent thrombosis seems rare.
- Extension of dissection into smaller distal vessels, which are difficult to stent.

CABG

- Rarely needed (0.7% in CanSCAD study)
- Bail-out strategy in very high-risk scenarios and failed PCI.
- The goal is to achieve survival, so high-capacity SVG is safe in this setting.

Antiplatelet and anticoagulant therapy in SCAD

CONSERVATIVE MANAGEMENT (no PCI)		ANTIPLATELET THERAPY	**LACK OF CONSENSUS ON THE USE AND DURATION OF DAPT-Clinical trials have now begun.** **CURRENT GUIDELINES:** DAPT for 1 year and lifelong aspirin. **Some experts advise:** · Limit or avoid the use of early or prolonged DAPT (lack of evidence for beneficial effect, rare intracoronary thrombus, risk of bleeding within the intramural haematoma causing dissection extension, etc). Example: DAPT for 2-4 weeks after SCAD and then continue low-dose aspirin alone for a total of 3- 12 months · **Aspirin** and **Clopidogrel** rather than the other P2Y12 inhibitors and avoid to administer intravenous antiplatelet therapies · In patients at higher risk of bleeding it is possible to consider aspirin alone or no antiplatelet therapy. · Longer-duration of antiplatelet therapy depends on the presence of other comorbidities (FMD or other dissections where low-dose of aspirin is considered "reasonable"
		ANTICOAGULANTS	**GENERAL APPROACH:** To discontinue systemic anticoagulation when SCAD is diagnosed with the exception of situations when it is beneficial unequivocally (example: LV thrombus, thromboembolism).
INTERVENTIONAL MANAGEMENT	PCI	ANTIPLATELET THERAPY	DAPT based on ACS guidelines.
		ANTICOAGULANTS	Limit systemic anticoagulation to during revascularization procedures when SCAD is diagnosed with the exception of situations when it is beneficial unequivocally (examples: LV thrombus, thromboembolism). Risk-benefit is unknown with GP2b3a inhibitors, but luminal thrombus is uncommon.
	THROMBSOLYIS	**CONTRAINDICATED** (reports of dissection extension and coronary rupture)	

SCAD: Long term management

SCAD recurrence prevention

- Beta-blockers-Clinical trails have now started to look at the benefit of beta blockers in SCAD.
- Well controlled blood pressure
- Advice on physical activity post-SCAD
  - Pursue regular, moderate physical activity avoiding extreme endurance training, exercising to exhaustion, or exertion in extreme temperature conditions.
  - To avoid heavy objects lifting (prolonged Valsalva).
- Individualised advise on HRT and contraception.

Managing post-SCAD chest pain

- Counselling: Advise that this usually improves over 18 months-2 years, but can be worse and prolonged in patients with previous pain syndromes, psychological and psychiatric disorders.
- Trial of antianginal pharmacologic therapy (Ranolazine, Ca-antagonist, etc) to relieve ischaemic symptoms from presumed coronary vasospasm or coronary microvascular dysfunction.
  Can be considered but variable and often limited response to treatment. Avoid multiple anti-anginals unless there is a definite treatment effect.

Assessment of associated extra coronary vascular abnormalities

- CT angiogram or magnetic resonance angiogram from brain to pelvis.
- F/U coronary angiography is rarely indicated. CT coronary angiography may be considered in selected cases.

Quality of life

- Cardiac rehabilitation
- Heart failure therapy (in case of LV significant impairment)
- Migraine therapy
- Psychosocial/mental health treatment (drug therapy, psychological therapy, support groups)

References and copyright acknowledgments

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Abbreviations

APTT = Activated partial thromboplastin time
AB = Airway and breathing
ABG = Arterial blood gas
AADs = Antiarrhythmic drugs
AAS = Acute aortic syndrome
ACEI = Angiotensin converting enzyme inhibitor
ACLS = Advanced cardiovascular life support
ACS = Acute coronary syndrome
ACT = Activated clotting time
AD = Aortic Dissection
AED = Automated external defibrillator
AF = Atrial fibrillation
ANA = Antinuclear antibodies
Ao = Aortic
aPTT = Activated partial thromboplastin time
ARB = Angiotensin receptor blockers
AS = Aortic stenosis
AV = Atrioventricular
AVB = Atrioventricular conduction block
AVN = Atrioventricular node
AVNRT = Atrioventricular nodal re-entrant tachycardia
AVNT = Atrioventricular nodal tachycardia
BID = Twice a day
BBB = Bundle branch block
BLS = Basic life support
BNP = Brain natriuretic peptide
BP = Blood pressure
CABG = Coronary artery bypass grafting
CAD = Coronary artery disease
Cath Lab = Catheterisation laboratory
CCB = Calcium channel blockers
CCU = Coronary care unit
CHF = Congestive heart failure
CMR = Cardiovascular magnetic resonance
COPD = Chronic obstructive pulmonary disease
CPAP = Continuous positive airway pressure
CPR = Cardiopulmonary resuscitation
Cr = Creatinine blood level (mg/dL)
CrCl = Creatinine clearance
CRP = C-reactive protein
CS = Cardiogenic shock
CSM = Carotid sinus massage
CSNRT = Corrected sinus node recovery time

Abbreviations (Cont.)

CSS = Carotid sinus syndrome
CT = Computed tomography
CT-angio = Computed tomography angiography
cTn = Cardiac troponin
CUS = Compression venous ultrasound
CV = Cardiovascular
CVA = Cerebrovascular accident
CXR = Chest X-ray
DAPT = Dual antiplatelet therapy
DD = Dyastolic dysfunction
DM = Diabetes mellitus
dTT = Diluted thrombin time
DVT = Deep vein thrombosis
ECG = Electrocardiogram
Echo = Echocardiogram
ECMO = Extracorporeal membrane oxygenation
ECT = Ecarin clotting time
ED = Emergency department
EF = Ejection fraction
EG = Electrograms
eGFR = Estimated glomerular filtration rate (ml/min/1.73 m^2)
EMB = Endomyocardial biopsy
EMS = Emergency medical services
EPS = Electrophysiological study
ERC = European Resuscitation Council
ESR = Erythrocyte sedimentation rate
ETT = Exercice treadmill testing
FFP = Fresh frozen plasma
FMC = First medical contact
GER = Gastroesophageal reflux
GFR = Glomerular flow rate
GI = Gastrointestinal
GP = Glycoprotein
Hb = Haemoglobin
HF = Heart failure
HIT = Heparin-induced thrombocytopenia
HOCM = Hypertrophic obstructive cardiomyopathy
HTN = Hypertension
HR = Heart rate
hsTn = High-sensitive troponin
IABP = Intra-aortic balloon pump
ICC = Intensive cardiac care
ICCU = Intensive cardiac care unit

Abbreviations (Cont.)

ICD = Implantable cardioverter defibrillator
ICI = Immune checkpoint inhibitors
IHD = Ischemic heart disease
IMH = Intramural hematoma
IRF = Immediate-release formulation
ISFC = International Society and Federation of Cardiology
i.o. = Intraosseous
IV = Invasive ventilation
i.v. = Intravenous
KD = Kidney disease
LBBB = Left bundle branch block
LD = Loading dose
LGE = Late gadolinium enhancement
LMWH = Low-molecular weight heparin
LOC = Loss of consciousness
LV = Left ventricular
LVAD/Bi-AD = left ventricular, bi-ventricular assist device
LVD = Left ventricular dysfunction
LVEF = Left ventricular ejection fraction
LVH = Left ventricular hypertrophy
LVSD = Left ventricular systolic dysfunction
MCS = Mechanical circulatory support
MD = Maintenance dose
MDCT = Computed tomography with >4 elements
MI = Myocardial infarction
MRA = Mineralocorticoid receptor antagonist
MRI = Magnetic resonance imaging
Mvo = Microvascular obstruction
NIV = Non-invasive ventilation
NOAC = New oral anticoagulants
NSAID = Non-steroidal anti-inflammatory drugs
NSVT = Non-sustained ventricular tachycardia or recurrent
NSTE-ACS = Non ST-segment elevation acute coronary syndrome
NSTEMI = Non ST-segment elevation myocardial infarction
NTG = Nitroglycerin
NT-proBNP = N-terminal pro brain natriuretic peptide
NVAF = Non-valvular atrial fibrillation
NYHA = New York Heart Association

OH = Orthostatic hypotension
PAP = Pulmonary arterial pressure
PAU = Penetrating aortic ulcer
PCI = Percutaneous coronary intervention
PCM = Physical counter-measures
PCP = Pulmonary capillary pressure
PE = Pulmonary embolism
PEA = Pulmonary endarterectomy
PEEP = Positive end expiratory pressure
PPC = Prothrombin complex concentrate
PR = Pulmonary regurgitation
PRECISE-DAPT = PREdicting bleeding Complications In patients undergoing Stent implantation and subsEquent Dual Anti Platelet Therapy
PRF = Prolonged-release formulation
ProCT = Procalcitonin
PRN = Pro re nata
PS-PEEP = Pressure support-positive end-expiratory pressure
PSVT = Paroxysmal supraventricular tachycardia
QD = Once a day
QPM = Every evening
rFVIIa = Recombinant factor VIIa
rtPA = Recombinant tissue plasminogen activator
RV = Right ventricular
RVOT-VT = Right ventricular outflow tract ventricular tachycardia
SBP = Systemic blood pressure
s.c = Subcutaneous
SIRS = Systemic inflammatory response syndrome
SLE = Systemic lupus erythematosus
SMU = Syncope management units
STE-ACS = ST-segment elevation acute coronary syndrome
STEMI = ST-segment elevation myocardial infarction
SVT = Supraventricular tachycardia
Spo_2 = Oxygen saturation
TEE = Transesophageal echocardiography
TEVAR = Thoracic endovascular aortic repair
TIA = Transient ischemic attack
TID = Three times a day
TLOC = Transient loss of consciousness
TOE = Transoesopageal echocardiography

Abbreviations (Cont.)

TSH = Thyroid-stimulating hormone
TTE = Transthoracic echocardiography
UA = Unstable angina
UFH = Unfractionated heparin
ULN = Upper limit of normal
VBGA = venous blood gas analysis
VF = Ventricular fibrillation
VR = Vascular resistance
VT = Ventricular tachycardia
VTE = Venous thromboembolism
VVS = Vasovagal syncope
WBC = white blood cell count
WHO = World Health Organization
WPW = Wolff-Parkinson-White

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