

ACS Guidelines 2023

What's new?

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What is new in 2023 ACS guidelines?

1. This is the first time an “ACS” guideline has been published encompassing the full spectrum of the syndrome including unstable angina, [NSTEMI](#) and [STEMI](#).
2. **Think ACS at initial assessment:** **A**- Abnormal ECG? **C**-Clinical context? **S**-Stable patient?
3. There is focus on comprehensive complete patient management from the point of admission to follow-up.
4. The concept of working diagnosis to final diagnosis is introduced to ensure a comprehensive evaluation and management of patients with ACS.
5. There is also emphasis on long-term management of patients
6. For the first time, with patient involvement as a member of the task force, the guideline provides patient perspectives.

Figure 2

The spectrum of clinical presentations, electrocardiographic findings, and high-sensitivity cardiac troponin levels in patients with acute coronary syndrome

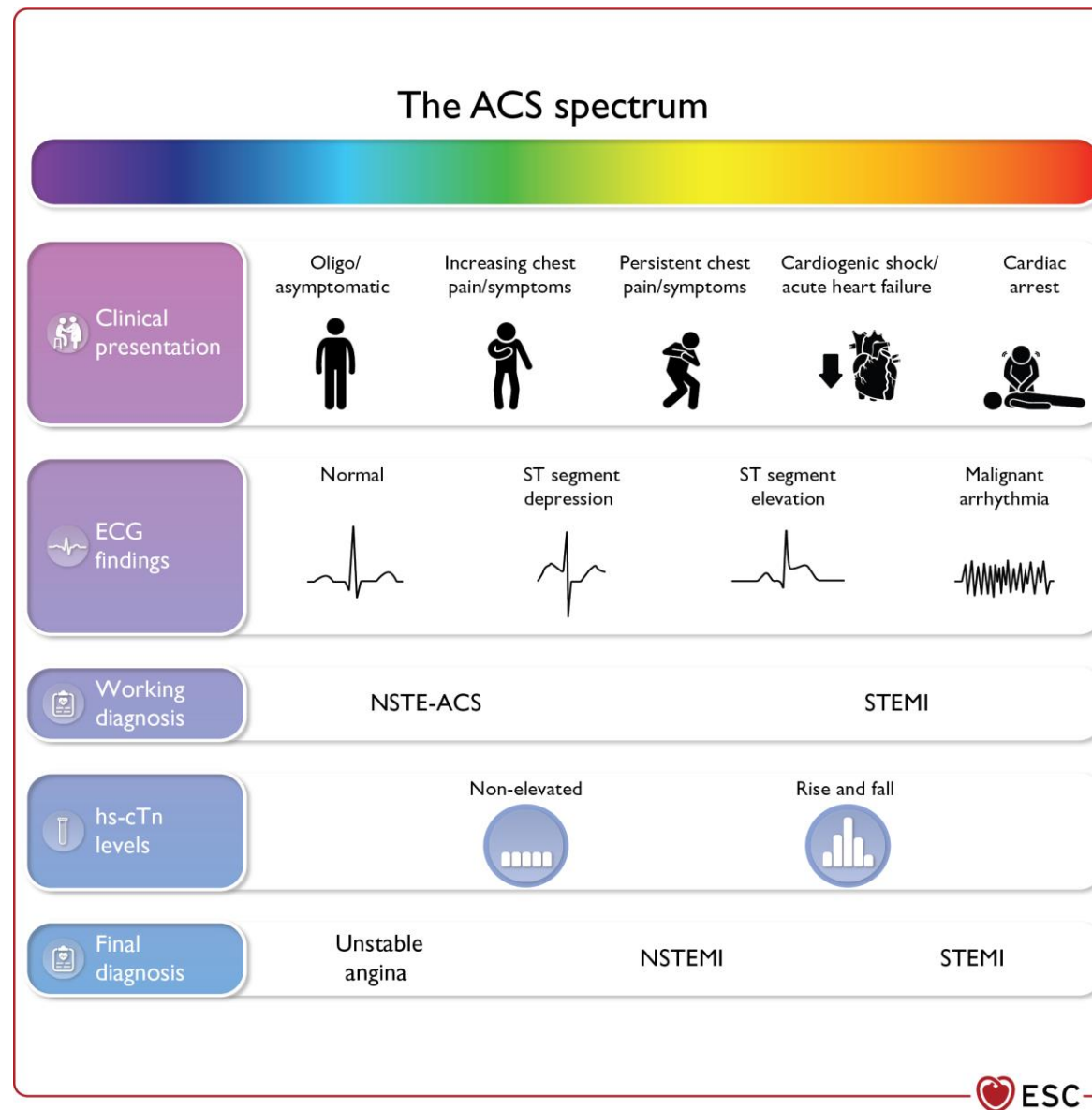
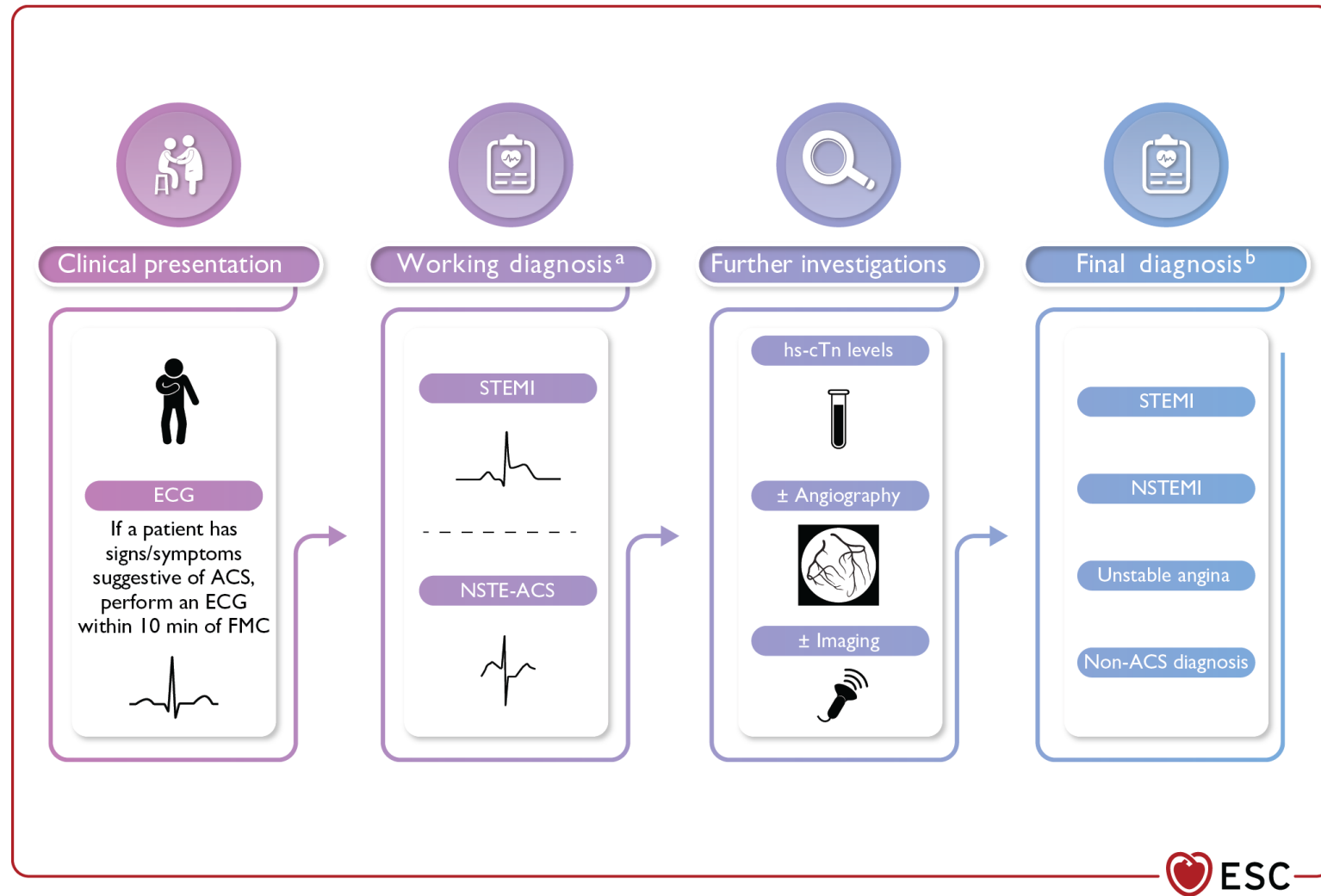


Figure 3

Classification of patients presenting with suspected acute coronary syndrome: from a working to a final diagnosis



Future guidelines?

OMI vs. NOMI

Figure S2: ECG abnormalities in patients with STEMI and ECG findings that, if present, may prompt triage for immediate reperfusion therapy.

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 other leads (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-segment elevation equivalent), and concomitant ST-segment elevation ≥ 0.5 mm recorded in leads V7–V9	Posterior STEMI	
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	
iv Multivessel ischaemia/ left main obstruction	ST depression ≥ 1 mm in six or more surface leads (inferolateral ST depression), coupled with ST-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	

BBB

In patients with a high clinical suspicion of ongoing myocardial ischemia, the presence of **LBBB, RBBB, or a paced rhythm** precludes an accurate assessment of the presence or absence of ST-segment elevation.

Therefore, patients presenting with these ECG patterns **in combination with signs/symptoms that are highly suspicious for ongoing myocardial ischemia** should be managed similarly to those with clear ST-segment elevation, regardless of whether the BBB is previously known

Troponin

Table S4 Assay specific cut-off levels in ng/L within the 0 h/1 h and 0 h/2 h algorithms

0 h/1 h algorithm	Very low	Low	No 1 hΔ	High	1 hΔ
hs-cTnT (Elecsys; Roche)	<5	<12	<3	≥52	≥5
hs-cTnI (Architect; Abbott)	<4	<5	<2	≥64	≥6
hs-cTnI (Centaur; Siemens)	<3	<6	<3	≥120	≥12
hs-cTnI (Access; Beckman Coulter)	<4	<5	<4	≥50	≥15
hs-cTnI (Clarity; Singulex)	<1	<2	<1	≥30	≥6
hs-cTnI (Vitros; Clinical Diagnostics)	<1	<2	<1	≥40	≥4
hs-cTnI (Pathfast; LSI Medience)	<3	<4	<3	≥90	≥20
hs-cTnI (TriageTrue; Quidel)	<4	<5	<3	≥60	≥8
hs-cTnI (Dimension EXL; Siemens)	<9	<9	<5	≥160	≥100
0 h/2 h algorithm	Very low	Low	No 2 hΔ	High	2 hΔ
hs-cTnT (Elecsys; Roche)	<5	<14	<4	≥52	≥10
hs-cTnI (Architect; Abbott)	<4	<6	<2	≥64	≥15
hs-cTnI (Centaur; Siemens)	<3	<8	<7	≥120	≥20
hs-cTnI (Access; Beckman Coulter)	<4	<5	<5	≥50	≥20
hs-cTnI (Clarity; Singulex)	<1	TBD	TBD	≥30	TBD
hs-cTnI (Vitros; Clinical Diagnostics)	<1	TBD	TBD	≥40	TBD
hs-cTnI (Pathfast; LSI Medience)	<3	TBD	TBD	≥90	TBD
hs-cTnI (TriageTrue; Quidel)	<4	TBD	TBD	≥60	TBD

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The cut-offs apply irrespective of age, sex, and renal function. Optimized cut-offs for patients above 75 years of age and patients with renal dysfunction have been evaluated, but not consistently shown to provide better balance between safety and efficacy as compared with these universal cut-offs.^{30,31} The algorithms for additional assays are in development: hs-cTn T on Elecsys (Roche), hs-cTn I on Architect (Abbott), hs-cTn I on Centaur (Siemens), hs-cTn I on Access (Beckman Coulter), hs-cTn I on Clarity (Singulex), hs-cTn I on Vitros (Clinical Diagnostics), hs-cTn I on Pathfast (LSI Medience), and hs-cTn I on TriageTrue (Quidel).
 hs-cTn, high-sensitivity cardiac troponin; TBD, to be determined.^{30,31,67–88}

TTE

TTE can be useful to identify signs suggestive of ongoing ischemia or prior MI.

However, this should not result in relevant delays in transfer to the cardiac catheterization laboratory if there is suspicion of an acute coronary artery occlusion.

TTE can also be useful to suggest alternative etiologies associated with chest pain (i.e. acute aortic disease, RV signs in pulmonary embolism [PE]).

All patients presenting with CS or hemodynamic instability should undergo emergency TTE to try to identify the underlying cause—in particular, to assess LV and RV function and look for evidence of mechanical complications.

Figure 4

An overview of the initial triage, management and investigation of patients who present with signs and symptoms potentially consistent with acute coronary syndrome

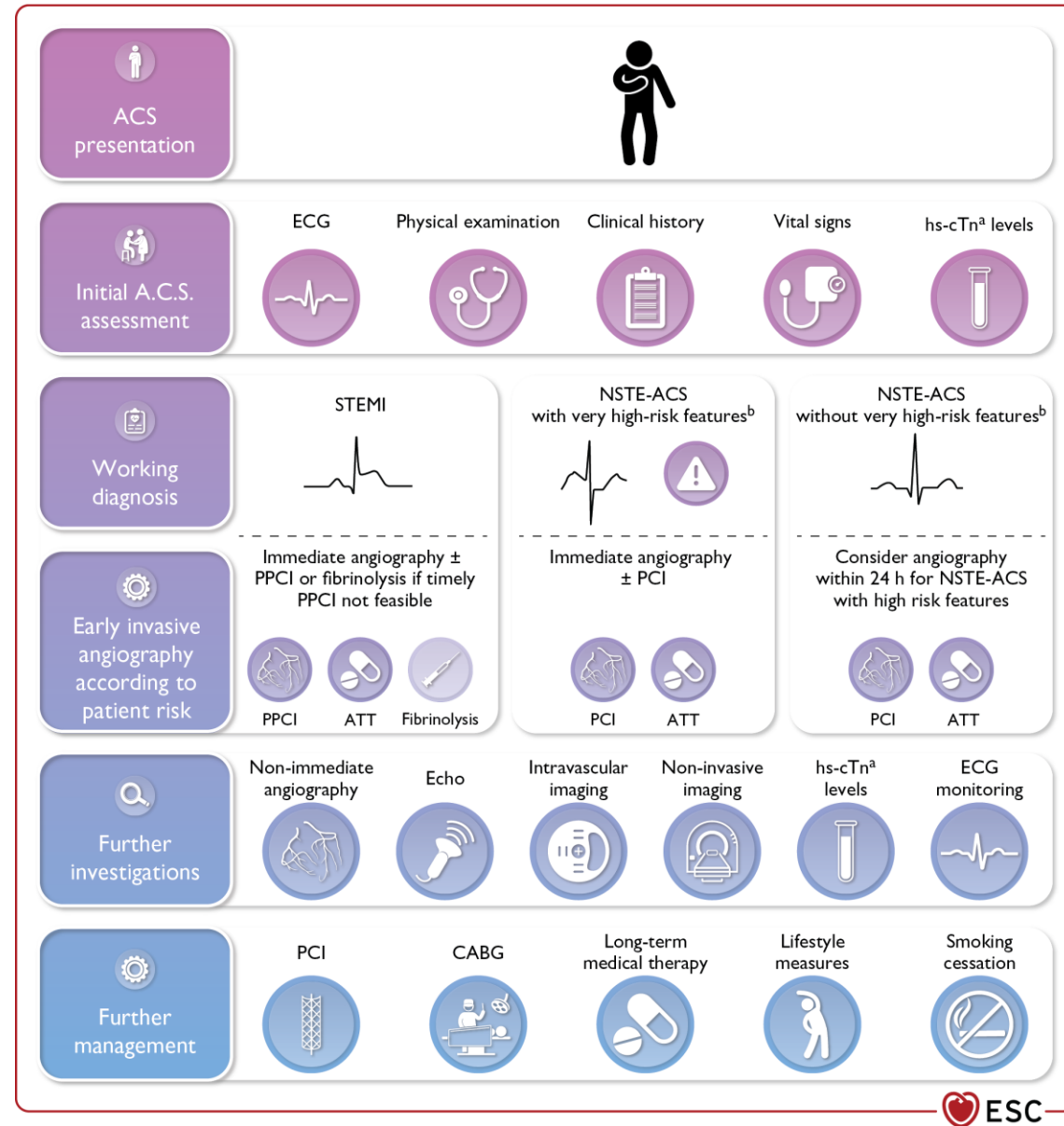


Figure 7
Modes of presentation and pathways to invasive management and myocardial revascularization in patients presenting with STEMI

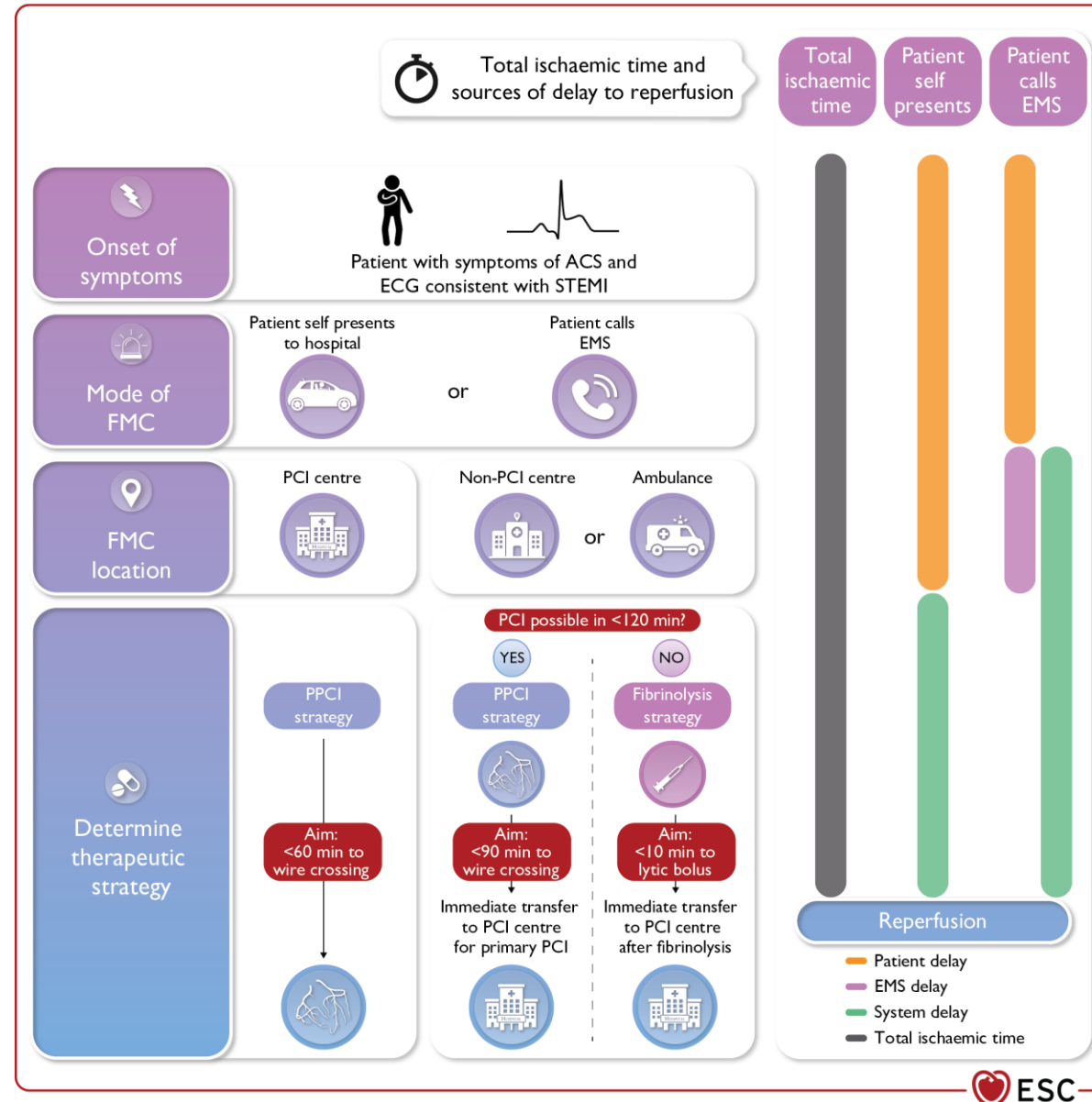
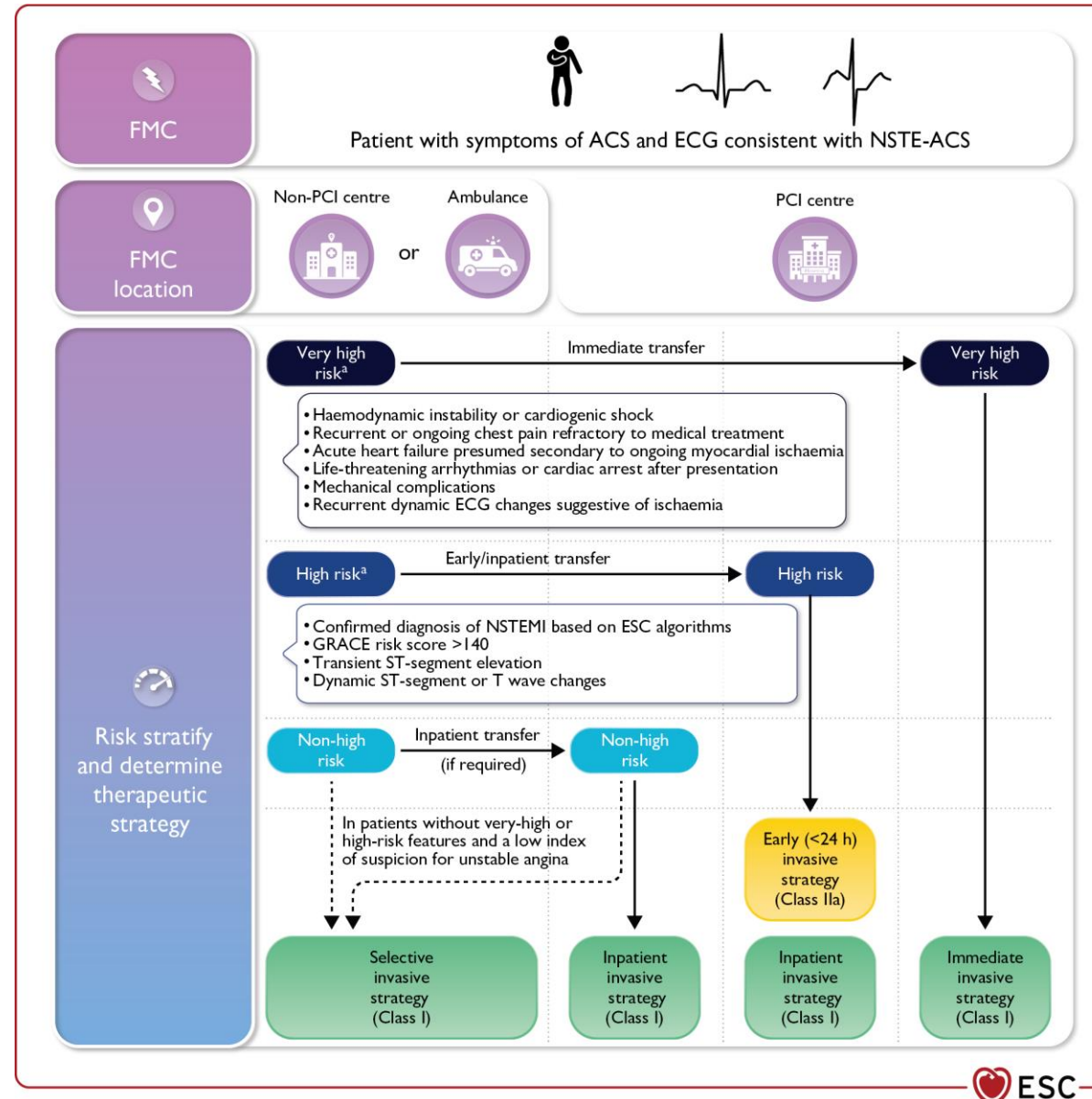


Figure 8

Selection of invasive strategy and reperfusion therapy in patients presenting with NSTEMI-ACS



An immediate invasive strategy refers to emergency (i.e. as soon as possible) angiography and PCI if indicated.

1. Hemodynamic instability or cardiogenic shock
2. Recurrent or ongoing chest pain refractory to medical treatment
3. Acute heart failure presumed secondary to ongoing myocardial ischemia
4. Life-threatening arrhythmias or cardiac arrest after presentation
5. Mechanical complications
6. Recurrent dynamic ECG changes suggestive of ischaemia (particularly with intermittent ST-segment elevation)

5.2.3. Routine vs. selective invasive strategy

A routine invasive strategy with inpatient coronary angiography is recommended for patients with a confirmed diagnosis of NSTEMI or a working diagnosis of NSTEMI-ACS and a high index of suspicion for UA. In patients with a working diagnosis of NSTEMI-ACS, multiple RCTs comparing routine vs. selective invasive strategies have been conducted and their results have been pooled in several meta-analyses.^{196–200} The available evidence indicates that a routine invasive strategy does not reduce all-cause mortality risk in the overall population of NSTEMI-ACS patients, but reduces the risk of composite ischaemic endpoints, particularly in high-risk patients. A routine invasive strategy can increase the risk of peri-procedural complications and bleeding. However, most of the available evidence is based on old RCTs that were conducted before the implementation of several important developments in PCI, including radial access, modern drug-eluting stents (DES), complete functional revascularization for

Early Invasive (<24h)

Several meta-analyses have pooled data from multiple RCTs assessing different timing intervals of invasive angiography among NSTEMI-ACS patients. None of these studies observed superiority of early invasive strategies compared with routine invasive strategies for death or non-fatal MI, although early invasive strategies were associated with a lower risk of recurrent/refractory ischaemia and a shorter duration of hospital stay.^{201–203} A collaborative meta-analysis comparing an early vs. a delayed invasive strategy using a modified individual patient data approach observed no difference in mortality overall but a survival benefit in high-risk patients, including those with a GRACE risk score >140 and those with positive troponin, although tests for interaction were inconclusive.²⁰²

New recommendations (1)

Recommendations	Class	Level
<i>Recommendations for antiplatelet and anticoagulant therapy in acute coronary syndrome</i>		
If patients presenting with ACS stop DAPT to undergo coronary artery bypass grafting, it is recommended they resume DAPT after surgery for at least 12 months.	I	C
→ In older ACS patients, especially if HBR, clopidogrel as the P2Y ₁₂ receptor inhibitor may be considered.	IIb	B
<i>Recommendations for alternative antithrombotic therapy regimens</i>		
In patients who are event-free after 3–6 months of DAPT and who are not high ischaemic risk, single antiplatelet therapy (preferably with a P2Y ₁₂ receptor inhibitor) should be considered.	IIa	A
→ P2Y ₁₂ inhibitor monotherapy may be considered as an alternative to aspirin monotherapy for long-term treatment.	IIb	A

The definition of older patients varies across trials, ranging from 70 to 80 years of age. Frailty and comorbidities should also be taken in consideration.

HBR - The presence of one major or two minor ARC-HBR risk factors indicates high bleeding risk (HBR)

Table 3 Major and minor criteria for hbr at the time of PCI

Major	Minor
Anticipated use of long-term oral anticoagulation*	Age ≥ 75 y
Severe or end-stage CKD (eGFR < 30 mL/min)	Moderate CKD (eGFR 30–59 mL/min)
Hemoglobin < 11 g/dL	Hemoglobin 11–12.9 g/dL for men and 11–11.9 g/dL for women
Spontaneous bleeding requiring hospitalization or transfusion in the past 6 mo or at any time, if recurrent	Spontaneous bleeding requiring hospitalization or transfusion within the past 12 mo not meeting the major criterion
Moderate or severe baseline thrombocytopenia† (platelet count $< 100 \times 10^9/L$)	Long-term use of oral NSAIDs or steroids
Chronic bleeding diathesis	Any ischemic stroke at any time not meeting the major criterion
Liver cirrhosis with portal hypertension	
Active malignancy‡ (excluding nonmelanoma skin cancer) within the past 12 mo	
Previous spontaneous ICH (at any time) Previous traumatic ICH within the past 12 mo	
Presence of a bAVM Moderate or severe ischemic stroke§ within the past 6 mo	
Nondeferrable major surgery on DAPT	
Recent major surgery or major trauma within 30 d before PCI	

bAVM indicates brain arteriovenous malformation; CKD, chronic kidney disease; DAPT, dual antiplatelet therapy; eGFR, estimated glomerular filtration rate; HBR, high bleeding risk; ICH, intracranial hemorrhage; NSAID, nonsteroidal anti-inflammatory drug; and PCI, percutaneous coronary intervention.

*This excludes vascular protection doses.⁴²

†Baseline thrombocytopenia is defined as thrombocytopenia before PCI.

‡Active malignancy is defined as diagnosis within 12 months and/or ongoing requirement for treatment (including surgery, chemotherapy, or radiotherapy).

§National Institutes of Health Stroke Scale score ≥ 5 .

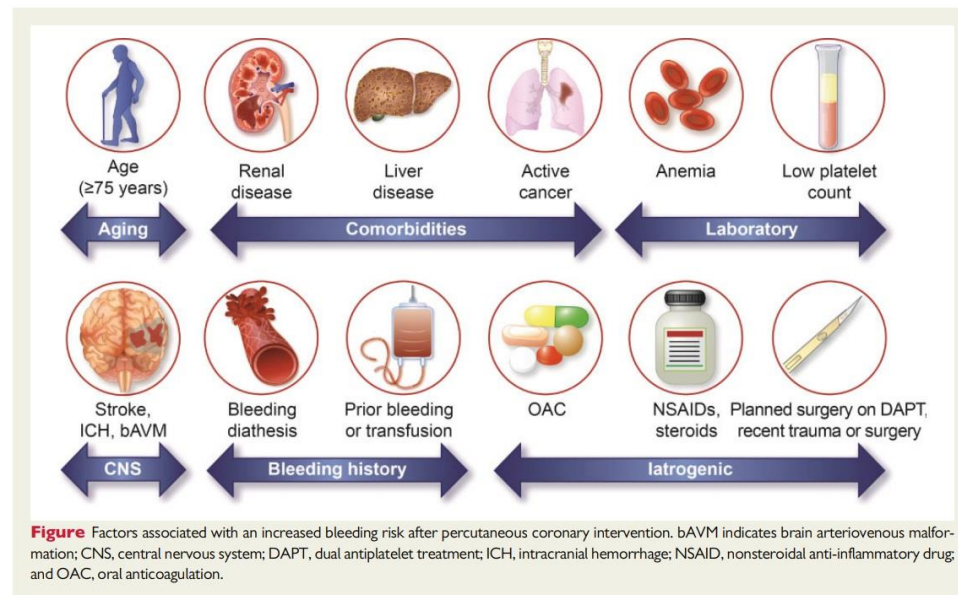
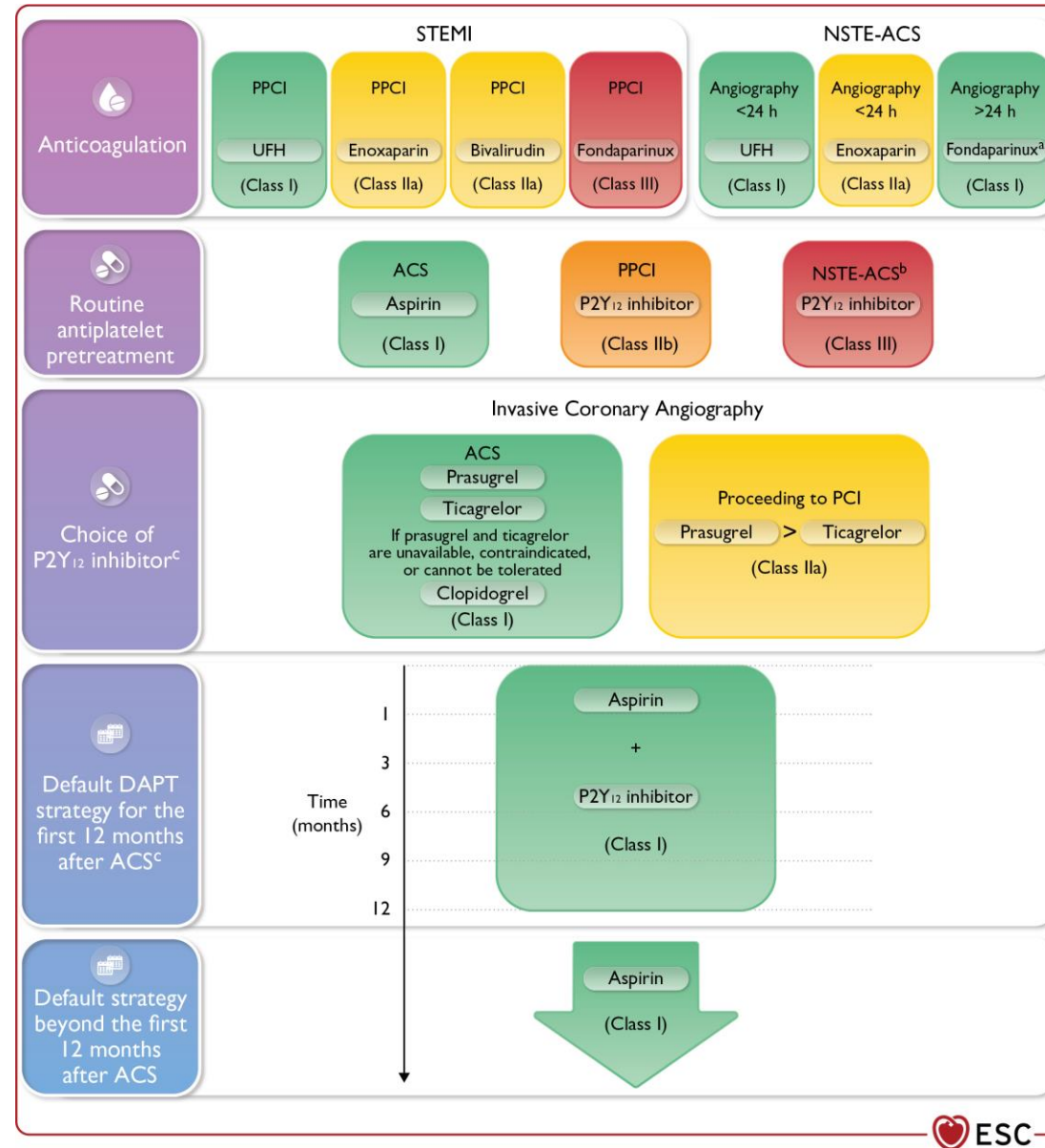


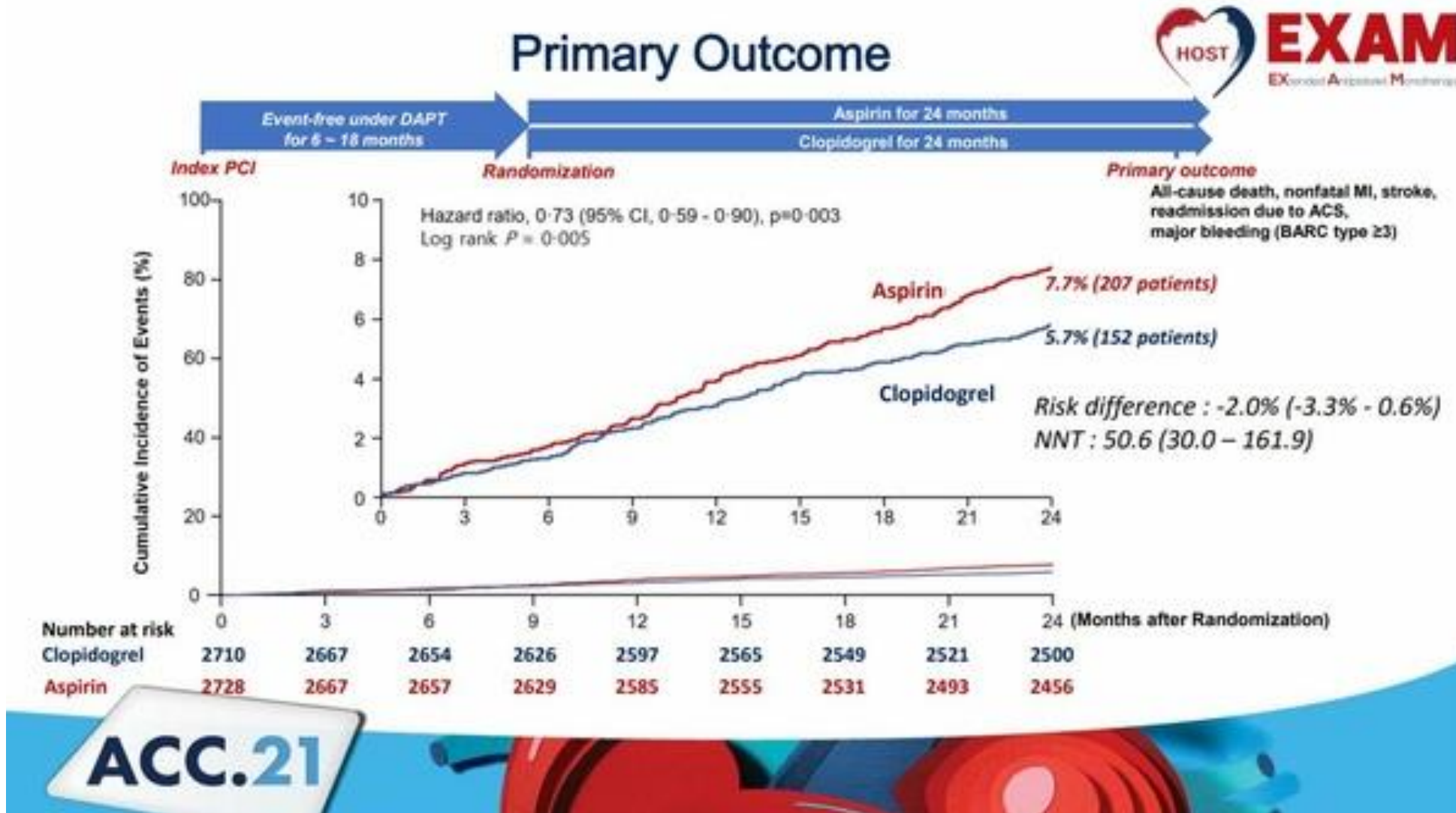
Figure 10
Recommended
default
antithrombotic
therapy regimens in
acute coronary
syndrome patients
without an indication
for oral
anticoagulation



ASA (Class I) vs. Clop. (Class IIb) ?

The HOST-EXAM trial is a randomized trial that compared clopidogrel and aspirin monotherapy in patients who received percutaneous coronary intervention (PCI) with a drug-eluting stent¹. The trial enrolled 5,436 patients who had received a coronary stent². The trial showed that clopidogrel monotherapy is superior to aspirin monotherapy as chronic maintenance therapy among patients who had successfully completed the required duration of DAPT therapy post-DES PCI^{3 4}.

ASA (Class I) vs. Clop. (Class IIb) ?



New recommendations (2)

Recommendations	Class	Level
<i>Recommendations for alternative antithrombotic therapy regimens (continued)</i>		
In HBR patients, aspirin or P2Y ₁₂ receptor inhibitor monotherapy after 1 month of DAPT may be considered.	IIb	B
In patients requiring OAC, withdrawing antiplatelet therapy at 6 months while continuing OAC may be considered.	IIb	B
De-escalation of antiplatelet therapy in the first 30 days after an ACS event is not recommended.	III	B
<i>Recommendations for cardiac arrest and out-of-hospital cardiac arrest</i>		
→ Evaluation of neurological prognosis (no earlier than 72 h after admission) is recommended in all comatose survivors after cardiac arrest.	I	C
Transport of patients with out-of-hospital cardiac arrest to a cardiac arrest centre according to local protocol should be considered.	IIa	C

New recommendations (3)

Recommendations	Class	Level
<i>Recommendations for technical aspects of invasive strategies</i>		
→ In patients with spontaneous coronary artery dissection, PCI is recommended only for patients with symptoms and signs of ongoing myocardial ischaemia, a large area of myocardium in jeopardy, and reduced antegrade flow.	I	C
→ Intravascular imaging should be considered to guide PCI.	IIa	A
Intravascular imaging (preferably optical coherence tomography) may be considered in patients with ambiguous culprit lesions.	IIb	C
<i>Recommendations for multivessel disease in ACS patients presenting in cardiogenic shock</i>		
Staged PCI of non-IRA should be considered.	IIa	C
<i>Recommendations for multivessel disease in haemodynamically stable STEMI patients undergoing primary PCI</i>		
It is recommended that PCI of the non-IRA is based on angiographic severity.	I	B
Invasive epicardial functional assessment of non-culprit segments of the IRA is not recommended during the index procedure.	III	C

New recommendations (4)

Recommendations	Class	Level
<i>Recommendations for acute coronary syndrome complications</i>		
→ Implantation of a permanent pacemaker is recommended when high-degree AV block does not resolve within a waiting period of at least 5 days after MI.	I	C
Cardiac magnetic resonance should be considered in patients with equivocal echocardiographic images or in cases of high clinical suspicion of LV thrombus.	IIa	C
Following an acute anterior MI, a contrast echocardiogram may be considered for the detection of LV thrombus if the apex is not well visualized on echocardiography.	IIb	C
In selected patients with high-degree AV block in the context of an anterior wall MI and acute heart failure, early device implantation (cardiac resynchronization therapy – defibrillator/pacemaker;) may be considered.	IIb	C
In patients with recurrent life-threatening ventricular arrhythmias, sedation or general anaesthesia to reduce sympathetic drive may be considered.	IIb	C

New recommendations (5)

Recommendations	Class	Level
<i>Recommendations for acute coronary syndrome comorbid conditions</i>		
It is recommended to base the choice of long-term glucose-lowering treatment on the presence of comorbidities, including heart failure, chronic kidney disease, and obesity.	I	A
For frail older patients with comorbidities, a holistic approach is recommended to individualize interventional and pharmacological treatments after careful evaluation of the risks and benefits.	I	B
→ An invasive strategy is recommended in cancer patients presenting with high-risk ACS with expected survival ≥ 6 months.	I	B
→ A temporary interruption of cancer therapy is recommended in patients in whom the cancer therapy is suspected to be a contributing cause of ACS.	I	C
A conservative non-invasive strategy should be considered in ACS patients with poor cancer prognosis (i.e. with expected life survival < 6 months) and/or very high bleeding risk.	IIa	C

New recommendations (6)

Recommendations	Class	Level
<i>Recommendations for acute coronary syndrome comorbid conditions (continued)</i>		
Aspirin is not recommended in cancer patients with a platelet count <10 000/ μ L.	III	C
Clopidogrel is not recommended in cancer patients with a platelet count <30 000/ μ L.	III	C
In ACS patients with cancer and <50 000/ μ L platelet count, prasugrel or ticagrelor are not recommended.	III	C
<i>Recommendations for long-term management</i>		
It is recommended to intensify lipid-lowering therapy during the index ACS hospitalization for patients who were on lipid-lowering therapy before admission.	I	C
Low-dose colchicine (0.5 mg once daily) may be considered, particularly if other risk factors are insufficiently controlled or if recurrent cardiovascular disease events occur under optimal therapy.	IIb	A
Combination therapy with a high-dose statin plus ezetimibe may be considered during index hospitalization.	IIb	B

Revised recommendations (1)

Think invasive management



2017 and 2020	Class	Level	2023	Class	Level
<i>Recommendations for imaging for patients with suspected NSTEMI-ACS</i>					
In patients with no recurrence of chest pain, normal ECG findings, and normal levels of cardiac troponin (preferably high sensitivity), but still with suspected ACS, a non-invasive stress test (preferably with imaging) for inducible ischaemia or CCTA is recommended before deciding on an invasive approach.	I	B	In patients with suspected ACS, non-elevated (or uncertain) hs-cTn, no ECG changes and no recurrence of pain, incorporating CCTA or a non-invasive stress imaging test as part of the initial workup should be considered.	IIa	A

Revised recommendations (2)

Think invasive management



2017 and 2020	Class	Level	2023	Class	Level
<i>Recommendations for timing of invasive strategy in NSTEMI-ACS</i>					
<p>An early invasive strategy within 24 h is recommended in patients with any of the following high-risk criteria:</p> <ul style="list-style-type: none"> • Diagnosis of NSTEMI suggested by the diagnostic algorithm recommended in guidelines • Dynamic or presumably new contiguous ST/T-segment changes suggesting ongoing ischaemia • Transient ST-segment elevation. • GRACE risk score >140 	I	A	<p>An early invasive strategy within 24 h should be considered in patients with at least one of the following high-risk criteria:</p> <ul style="list-style-type: none"> • Confirmed diagnosis of NSTEMI based on current recommended ESC hs-cTn algorithms • Dynamic ST-segment or T wave changes • Transient ST-segment elevation • GRACE risk score >140 	IIa	A

Revised recommendations (3)

2017 and 2020	Class	Level	2023	Class	Level
<i>Recommendations for antiplatelet and anticoagulant therapy in STEMI</i>					
A potent P2Y ₁₂ 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.	I	A	Pre-treatment with a P2Y ₁₂ receptor inhibitor may be considered in patients undergoing a primary PCI strategy.	IIb	B

Prehospital Ticagrelor in ST-Segment Elevation Myocardial Infarction

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Table 2. Coprimary Efficacy End Points and Related Secondary End Points in the Modified Intention-to-Treat Population.*

End Point	Prehospital Ticagrelor (N=906) <i>no./no. of patients who could be evaluated (%)</i>	In-Hospital Ticagrelor (N=952)	Odds Ratio (95% CI) [†]	P Value [‡]	Difference (95% CI) [§]
Coprimary end points					
Absence of ST-segment elevation resolution ≥70% before PCI	672/774 (86.8)	722/824 (87.6)	0.93 (0.69 to 1.25)	0.63	−0.008 (−0.041 to 0.025)
Absence of TIMI flow grade 3 in infarct-related artery at initial angiography	681/824 (82.6)	711/856 (83.1)	0.97 (0.75 to 1.25)	0.82	−0.004 (−0.040 to 0.032)
Met one or both coprimary end points					
Both	541/744 (72.7)	571/777 (73.5)	0.96 (0.77 to 1.21)	0.73	−0.008 (−0.052 to 0.037)
One or both	677/719 (94.2)	710/751 (94.5)	0.93 (0.60 to 1.45)	0.75	−0.004 (−0.027 to 0.020)
Secondary end points					
Absence of ST-segment elevation resolution ≥70% after PCI	303/713 (42.5)	353/743 (47.5)	0.82 (0.66 to 1.004)	0.05	−0.050 (−0.101 to 0.001)
Absence of TIMI flow grade 3 in infarct related artery after PCI	135/760 (17.8)	154/784 (19.6)	0.88 (0.68 to 1.14)	0.34	−0.019 (−0.058 to 0.020)
Met one or both secondary end points					
Both	73/763 (9.6)	87/775 (11.2)	0.84 (0.60 to 1.16)	0.29	−0.017 (−0.047 to 0.014)
One or both	339/684 (49.6)	371/703 (52.8)	0.88 (0.71 to 1.09)	0.23	−0.032 (−0.085 to 0.020)

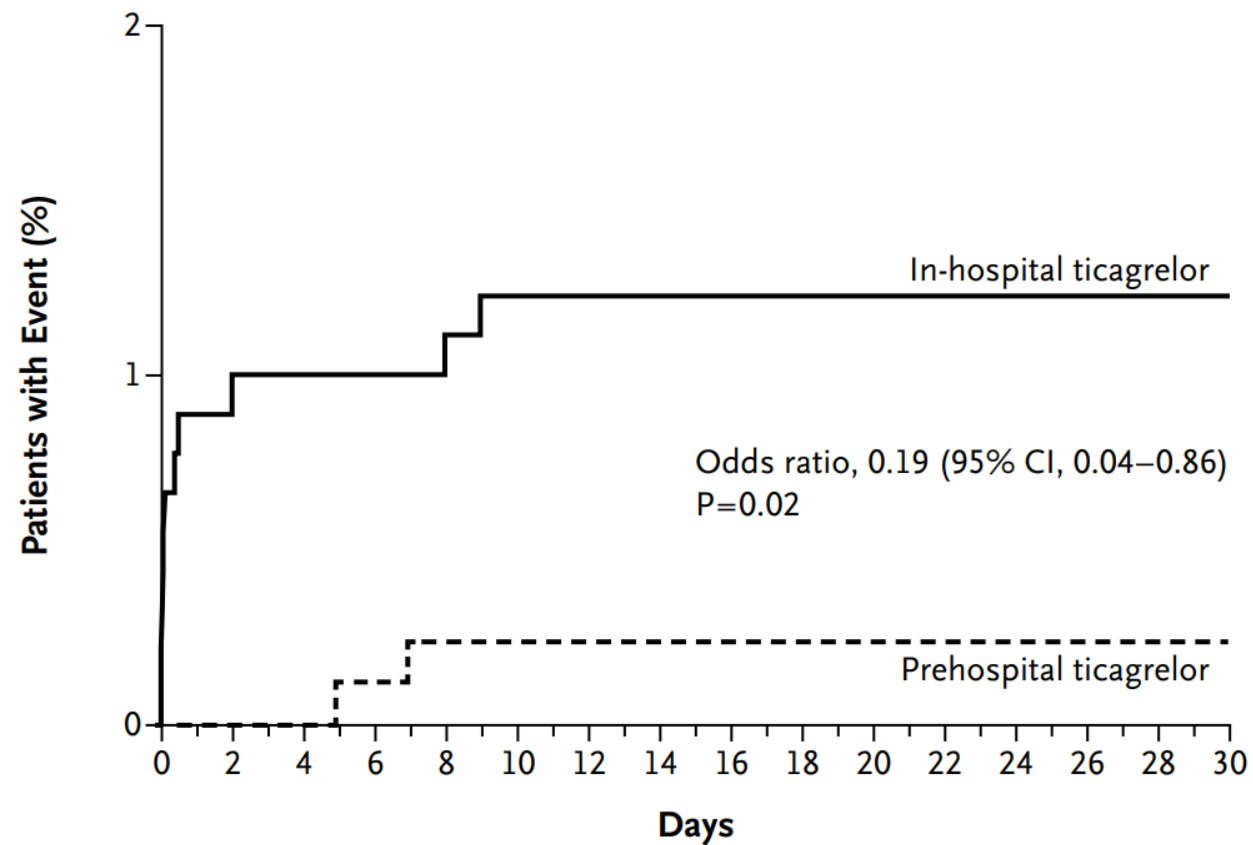


Figure 2. Definite Stent Thrombosis up to 30 Days after Ticagrelor Administration in the Modified Intention-to-Treat Population.

Revised recommendations (4)

2017 and 2020	Class	Level	2023	Class	Level
<i>Recommendations for long-term antithrombotic therapy</i>					
After stent implantation in patients undergoing a strategy of DAPT, stopping aspirin after 3–6 months should be considered, depending on the balance between the ischaemic and bleeding risks.	Ila	A	In patients who are event-free after 3–6 months of DAPT and who are not high ischaemic risk, SAPT (preferably with a P2Y ₁₂ receptor inhibitor) should be considered.	Ila	A

Revised recommendations (5)

2017 and 2020	Class	Level	2023	Class	Level
<i>Recommendations for cardiac arrest and out-of-hospital cardiac arrest</i>					
Delayed as opposed to immediate angiography should be considered among haemodynamically stable patients without ST-segment elevation successfully resuscitated after out-of-hospital cardiac arrest.	IIa	B	Routine immediate angiography after resuscitated cardiac arrest is not recommended in haemodynamically stable patients without persistent ST-segment elevation (or equivalents).	III	A
Targeted temperature management (also called therapeutic hypothermia), aiming for a constant temperature between 32 and 36 C for at least 24 h, is indicated in patients who remain unconscious after resuscitation from cardiac arrest (of presumed cardiac cause).	I	B	Temperature control (i.e. continuous monitoring of core temperature and active prevention of fever [i.e. >37.7°C]) is recommended after either out-of-hospital or in-hospital cardiac arrest for adults who remain unresponsive after return of spontaneous circulation.	I	B

LV Thrombus

LV thrombus

CMR imaging should be considered in patients with equivocal echocardiographic images or in cases of high clinical suspicion of LV thrombus.^{577,578}

IIa

C

Oral anticoagulant therapy (VKA or NOAC) should be considered for 3–6 months in patients with confirmed LV thrombus.⁶⁰³

IIa

C

Following an acute anterior MI, a contrast echocardiogram may be considered for the detection of LV thrombus if the apex is not well visualized on echocardiography.⁶⁰⁴

IIb

C

Revised recommendations (7)

2017 and 2020	Class	Level	2023	Class	Level
<i>Recommendations for management of multivessel disease in haemodynamically stable STEMI patients undergoing primary PCI</i>					
Routine revascularization of non-IRA lesions should be considered in STEMI patients with multivessel disease before hospital discharge.	IIa	A	Complete revascularization is recommended either during the index PCI procedure or within 45 days.	I	A
<i>Recommendations for acute coronary syndrome comorbid conditions</i>					
Glucose-lowering therapy should be considered in ACS patients with blood glucose >10 mmol/L (>180 mg/dL), with the target adapted to comorbidities, while episodes of hypoglycaemia should be avoided.	IIa	B	Glucose-lowering therapy should be considered in patients with ACS with persistent hyperglycaemia, while episodes of hypoglycaemia should be avoided.	IIa	C

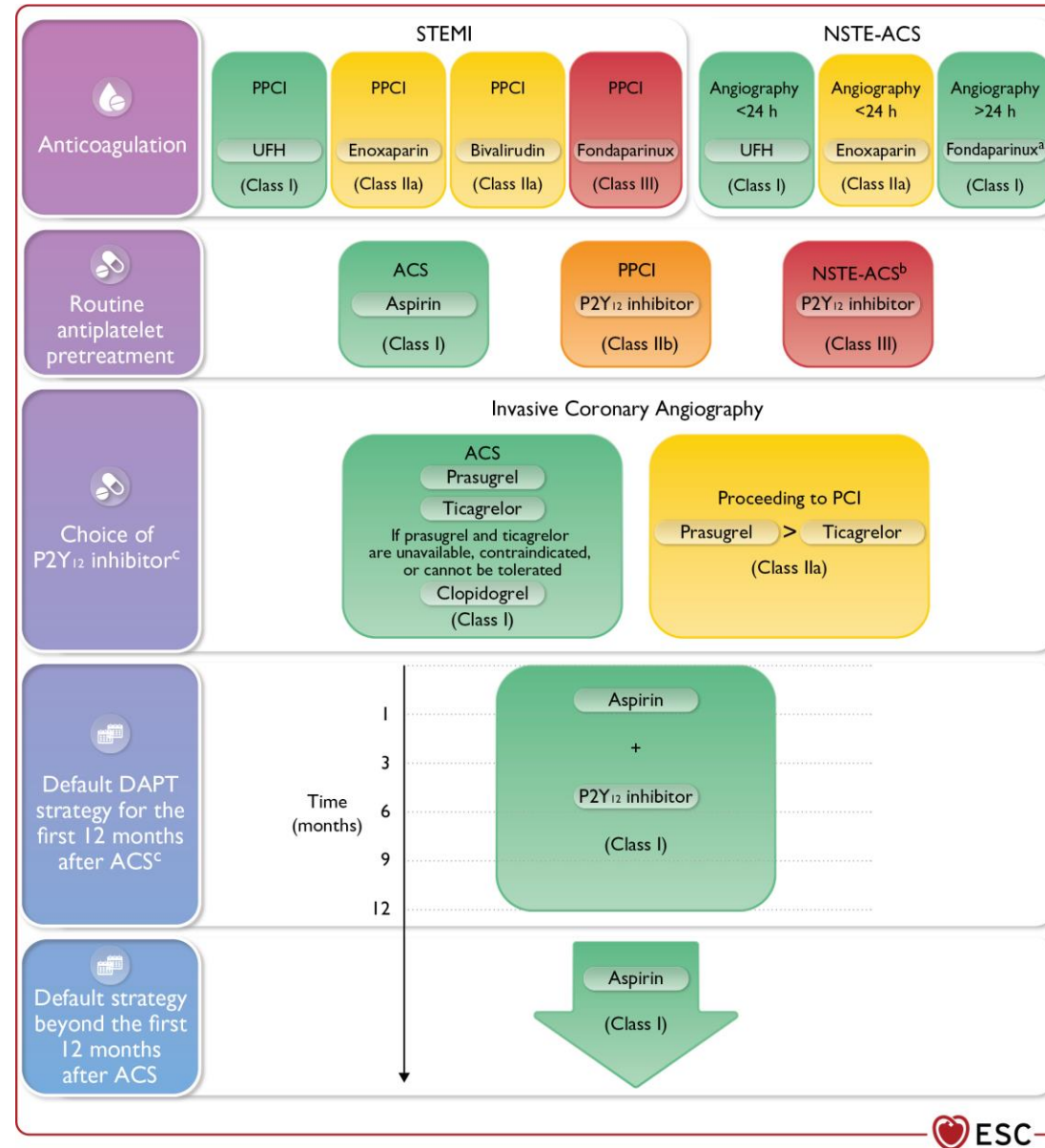
Recommendations for the initial management of patients with acute coronary syndrome (1)

Recommendations	Class	Level
<i>Hypoxia</i>		
Oxygen is recommended in patients with hypoxaemia (SaO ₂ <90%).	I	C
Routine oxygen is not recommended in patients without hypoxaemia (SaO ₂ >90%).	III	A
<i>Symptoms</i>		
Intravenous opioids should be considered to relieve pain.	IIa	C
A mild tranquilizer should be considered in very anxious patients.	IIa	C
<i>Intravenous beta-blockers</i>		
Intravenous beta-blockers (preferably metoprolol) should be considered at the time of presentation in patients undergoing PPCI with no signs of acute heart failure, an SBP >120 mmHg, and no other contraindications.	IIa	A

Recommendations for reperfusion therapy and timing of invasive strategy (2)

Recommendations	Class	Level
<i>Recommendations for reperfusion therapy for patients with STEMI (continued)</i>		
In patients with a working diagnosis of STEMI and a time from symptom onset >12 h, a PPCI strategy is recommended in the presence of ongoing symptoms suggestive of ischaemia, haemodynamic instability, or life-threatening arrhythmias.	I	C
A routine PPCI strategy should be considered in STEMI patients presenting late (12–48 h) after symptom onset.	IIa	B
Routine PCI of an occluded IRA is not recommended in STEMI patients presenting >48 h after symptom onset and without persistent symptoms.	III	A

Figure 10
Recommended default antithrombotic therapy regimens in acute coronary syndrome patients without an indication for oral anticoagulation



Suggested strategies to reduce bleeding risk related to percutaneous coronary intervention (1)

Strategies

- Anticoagulant doses adjusted to body weight and renal function, especially in women and older patients
- Radial artery approach as default vascular access
- Proton pump inhibitors in patients on dual antiplatelet therapy at higher-than-average risk of gastrointestinal bleeds (i.e. history of gastrointestinal ulcer/haemorrhage, anticoagulant therapy, chronic non-steroidal anti-inflammatory drug/corticosteroid use), or two or more of:
 - a. Age ≥ 65 years
 - b. Dyspepsia
 - c. Gastro-oesophageal reflux disease
 - d. *Helicobacter pylori* infection
 - e. Chronic alcohol use

Think revascularization:

- a. In STEMI, complete revascularization is recommended either during the index PCI procedure or within 45 days
- b. In patients with spontaneous coronary artery dissection, PCI is recommended only for patients with symptoms and signs of ongoing myocardial ischaemia, a large area of myocardium in jeopardy, and reduced antegrade flow
- c. Intravascular imaging should be considered to guide PCI
- d. In patients with cardiogenic shock, staged PCI of non-IRA should be considered.
- e. In patients with multivessel disease in the context of hemodynamically stable STEMI, it is recommended that PCI of the non-IRA is based on angiographic severity.
- f. Invasive epicardial functional assessment of non-culprit segments of the IRA is not recommended during the index procedure

Gaps in knowledge:

1. Most RCTs consist of men representing nearly 70% of the trial patient population. Therefore, more evidence on the best care of women with ACS is needed. Increased representation of female patients in future clinical trials is required to better inform the optimal management of women with ACS.
2. Older people are underrepresented in clinical trials. Therefore, more evidence on the best care of older adults with ACS is needed.

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