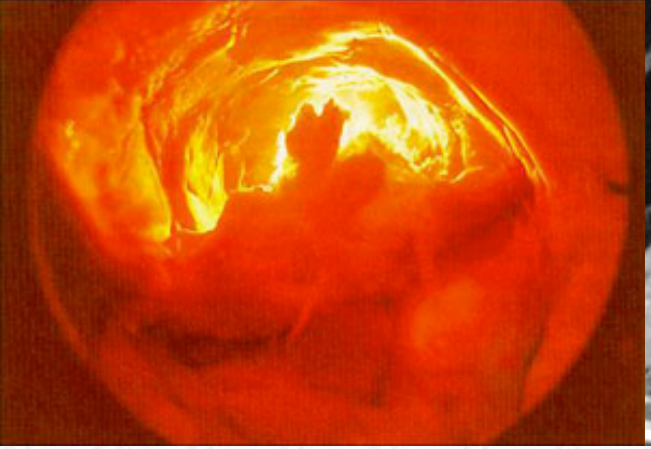
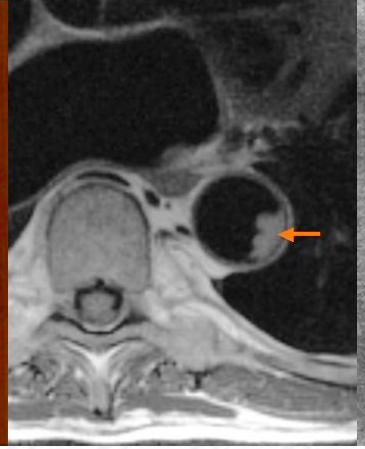
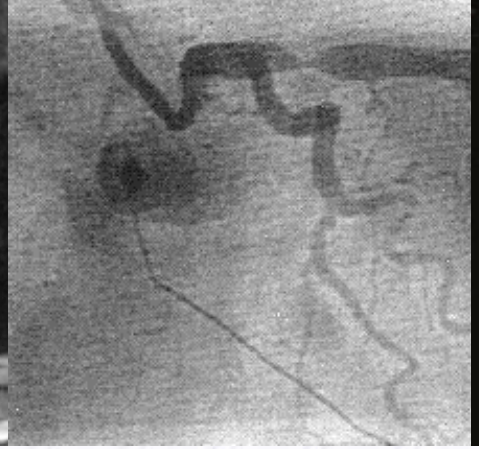
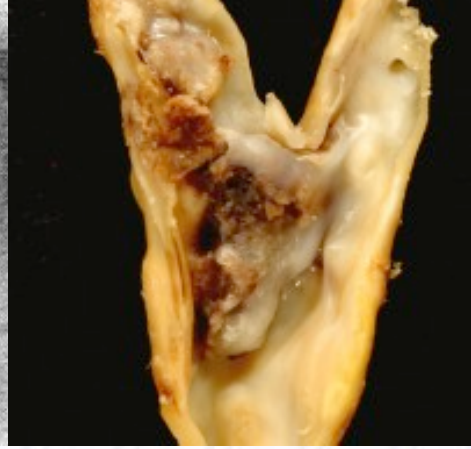

Prise en charge des patients NSTEMI. Nouvelles recommandations ESC

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ESC GUIDELINES

2015 ESC guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation

Task Force for the Management of Acute Coronary Syndromes in Patients Presenting without Persistent ST-Segment Elevation of the European Society of Cardiology (ESC)

Authors/Task Force Members: Marco Roffi* (Chairperson) (Switzerland), Carlo Patrono * (Co-Chairperson) (Italy), Jean-Philippe Collet† (France), Christian Mueller† (Switzerland), Marco Valgimigli† (The Netherlands), Felicita Andreotti (Italy), Jeroen J. Bax (The Netherlands), Michael A. Borger (Germany), Carlos Brotons (Spain), Derek P. Chew (Australia), Baris Gencer (Switzerland), Gerd Hasenfuss (Germany), Keld Kjeldsen (Denmark), Patrizio Lancellotti (Belgium), Ulf Landmesser (Germany), Julinda Mehilli (Germany), Debabrata Mukherjee (USA), Robert F. Storey (UK), and Stephan Windecker (Switzerland)

Epidémiologie SCA ST-

- Plus fréquents que STEMI
- Incidence 3/1000 habitants/an

- Mortalité hospitalière 3-5% vs 7% (STEMI)
- Mortalité à 6 mois identique 13% vs 12% (STEMI)
- Mortalité à 4 ans supérieure à STEMI

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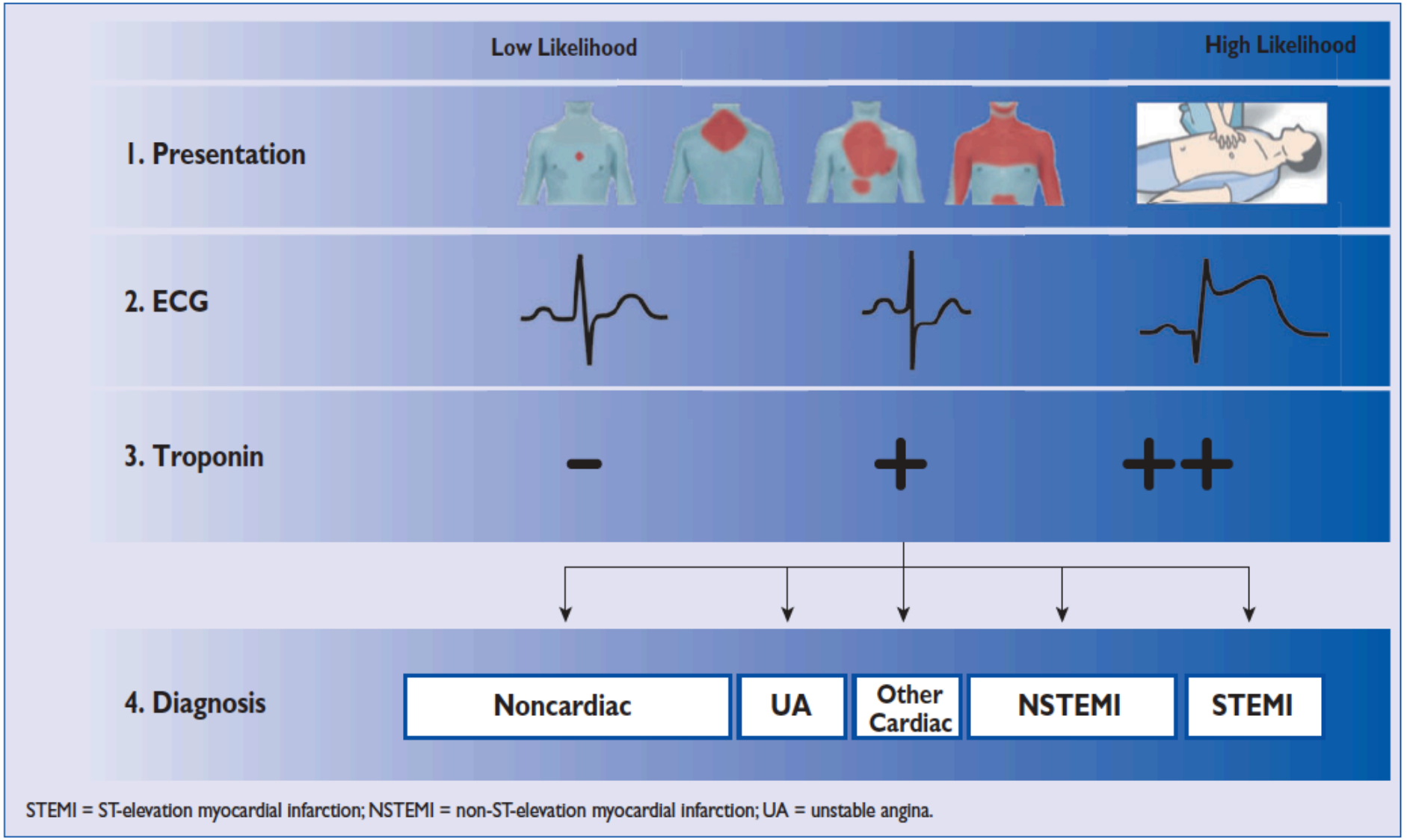


STEMI = ST-elevation myocardial infarction; NSTEMI = non-ST-elevation myocardial infarction; UA = unstable angina.

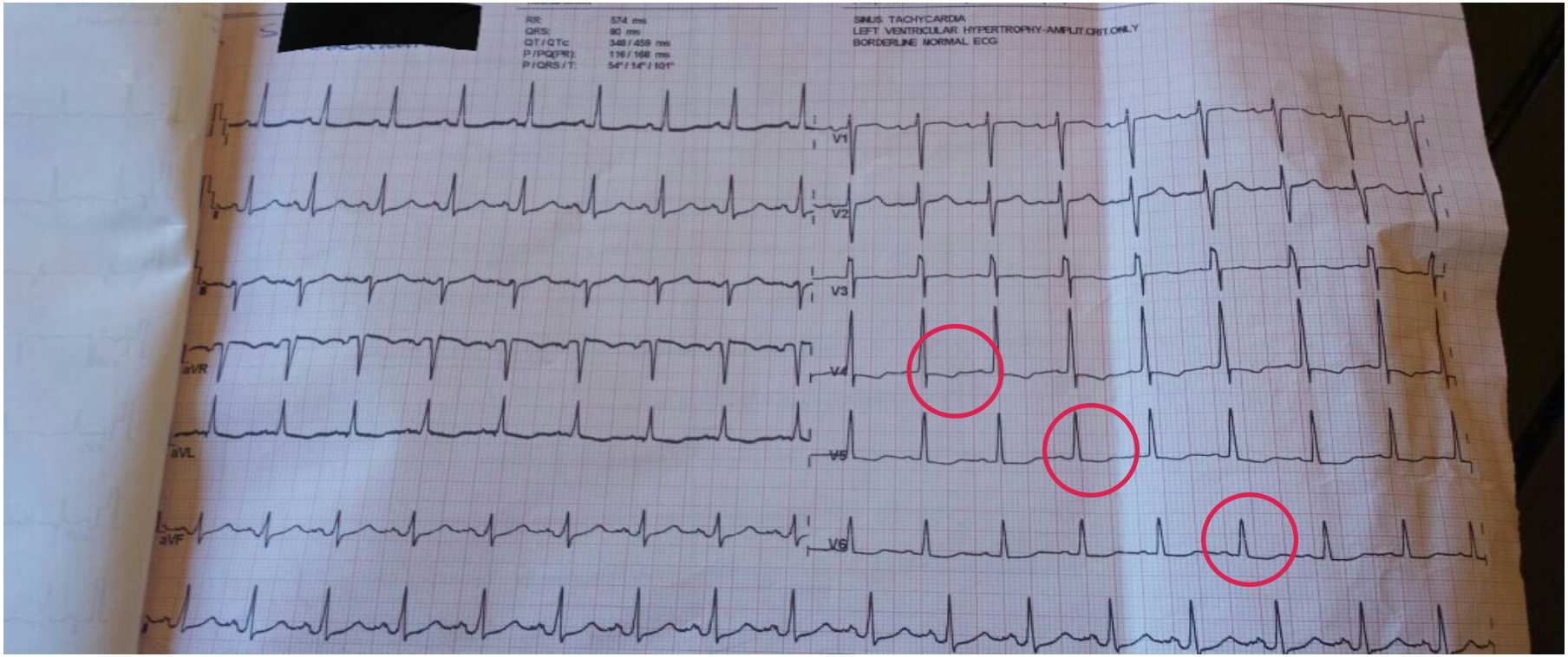
Patient

- Diabétique, hypertendu agé de 55 ans
- ATCD gastrite sous IPP
- Douleur thoracique compatible et dyspnée
- Tachycarde, hypoxie, insuffisance cardiaque

- **Diagnostic de syndrome coronaire aigu**

Recommendations	Class[a]	Level[b]
Diagnosis and risk stratification		
It is recommended to base diagnosis and initial short-term ischaemic and bleeding risk stratification on a combination of clinical history, symptoms, vital signs, other physical findings, ECG and laboratory results.	I	A
It is recommended to obtain a 12-lead ECG within 10 min after first medical contact and to have it immediately interpreted by an experienced physician. It is recommended to obtain an additional 12-lead ECG in case of recurrent symptoms or diagnostic uncertainty.	I	B
Additional ECG leads (V_{3R}, V_{4R}, V_7–V_9) are recommended if ongoing ischaemia is suspected when standard leads are inconclusive.	I	C

ECG



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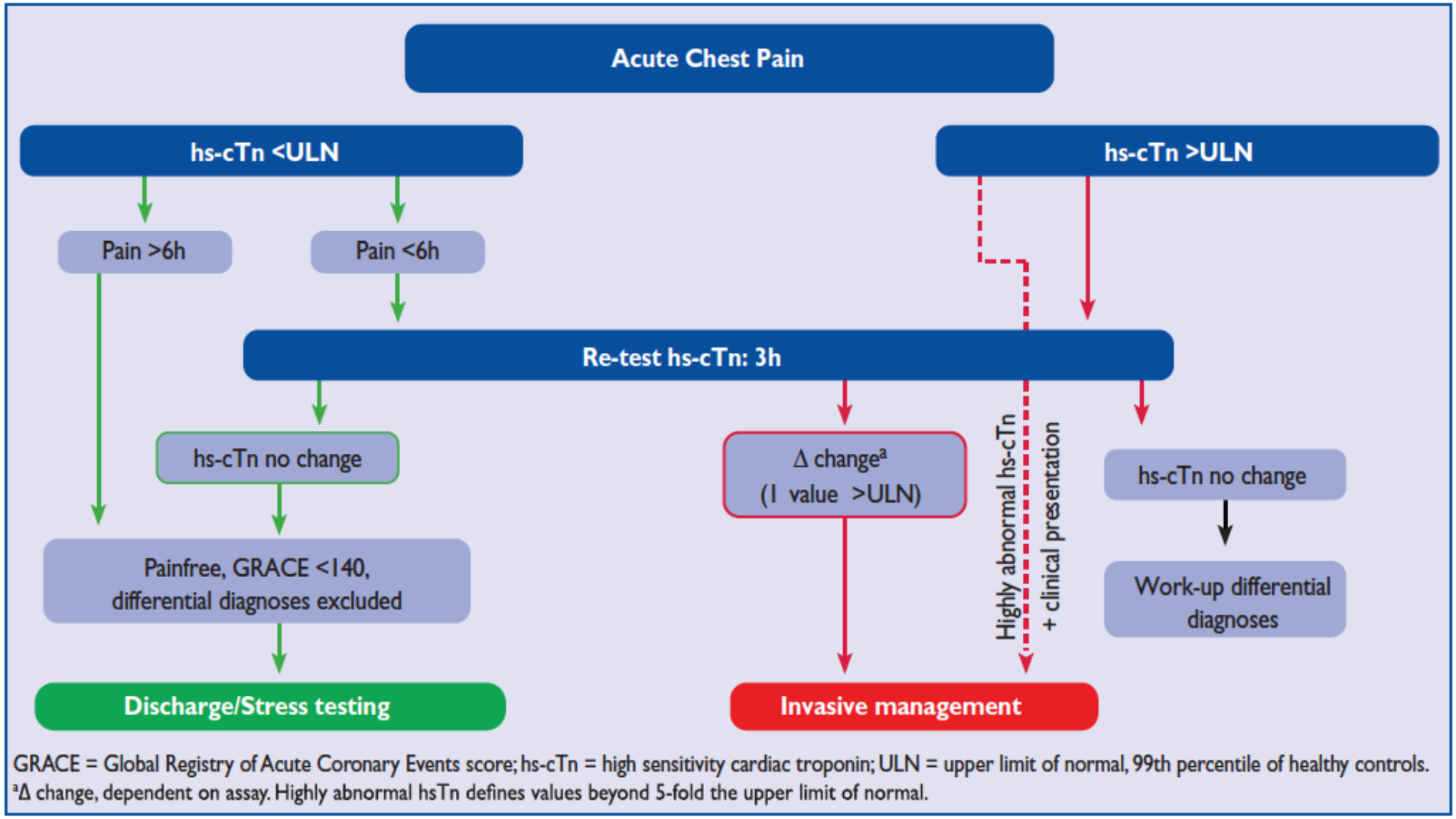
Recommendations	Class[a]	Level[b]
It is recommended to measure cardiac troponins with sensitive or high-sensitivity assays and obtain the results within 60 min.	I	A
A rapid rule-out protocol at 0 h and 3 h is recommended if high-sensitivity cardiac troponin tests are available.	I	B
A rapid rule-out and rule-in protocol at 0 h and 1 h is recommended if a high-sensitivity cardiac troponin test with a validated 0 h/1 h algorithm is available. Additional testing after 3–6 h is indicated if the first two troponin measurements are not conclusive and the clinical condition is still suggestive of ACS.	I	B

Troponine US

Clinical implications of high-sensitivity cardiac troponin assays
Compared with standard cardiac troponin assays, high-sensitivity assays:
• Have higher negative predictive value for acute MI.
• Reduce the "troponin-blind" interval leading to earlier detection of acute MI.
• Result in a ~4% absolute and ~20% relative increase in the detection of type 1 MI and a corresponding decrease in the diagnosis of unstable angina.
• Are associated with a 2-fold increase in the detection of type 2 MI.
Levels of high-sensitivity cardiac troponin should be interpreted as quantitative markers of cardiomyocyte damage (i.e. the higher the level, the greater the likelihood of MI):
• Elevations beyond 5-fold the upper reference limit have high (>90%) positive predictive value for acute type 1 MI.
• Elevations up to 3-fold the upper reference limit have only limited (50–60%) positive predictive value for acute MI and may be associated with a broad spectrum of conditions.
• It is common to detect circulating levels of cardiac troponin in healthy individuals.
Rising and/or falling cardiac troponin levels differentiate acute from chronic cardiomyocyte damage (the more pronounced the change, the higher the likelihood of acute MI).

MI = myocardial infarction.



GRACE = Global Registry of Acute Coronary Events score; hs-cTn = high sensitivity cardiac troponin; ULN = upper limit of normal, 99th percentile of healthy controls.
[a]Δ change, dependent on assay. Highly abnormal hsTn defines values beyond 5-fold the upper limit of normal.

Patient

- Diabétique, hypertendu agé de 55 ans
- ATCD gastrite sous IPP
- Douleur thoracique compatible et dyspnée
- Tachycarde, hypoxie, insuffisance cardiaque
- ECG sous dec ST
- Troponine élevée (ascension)

NSTEMI

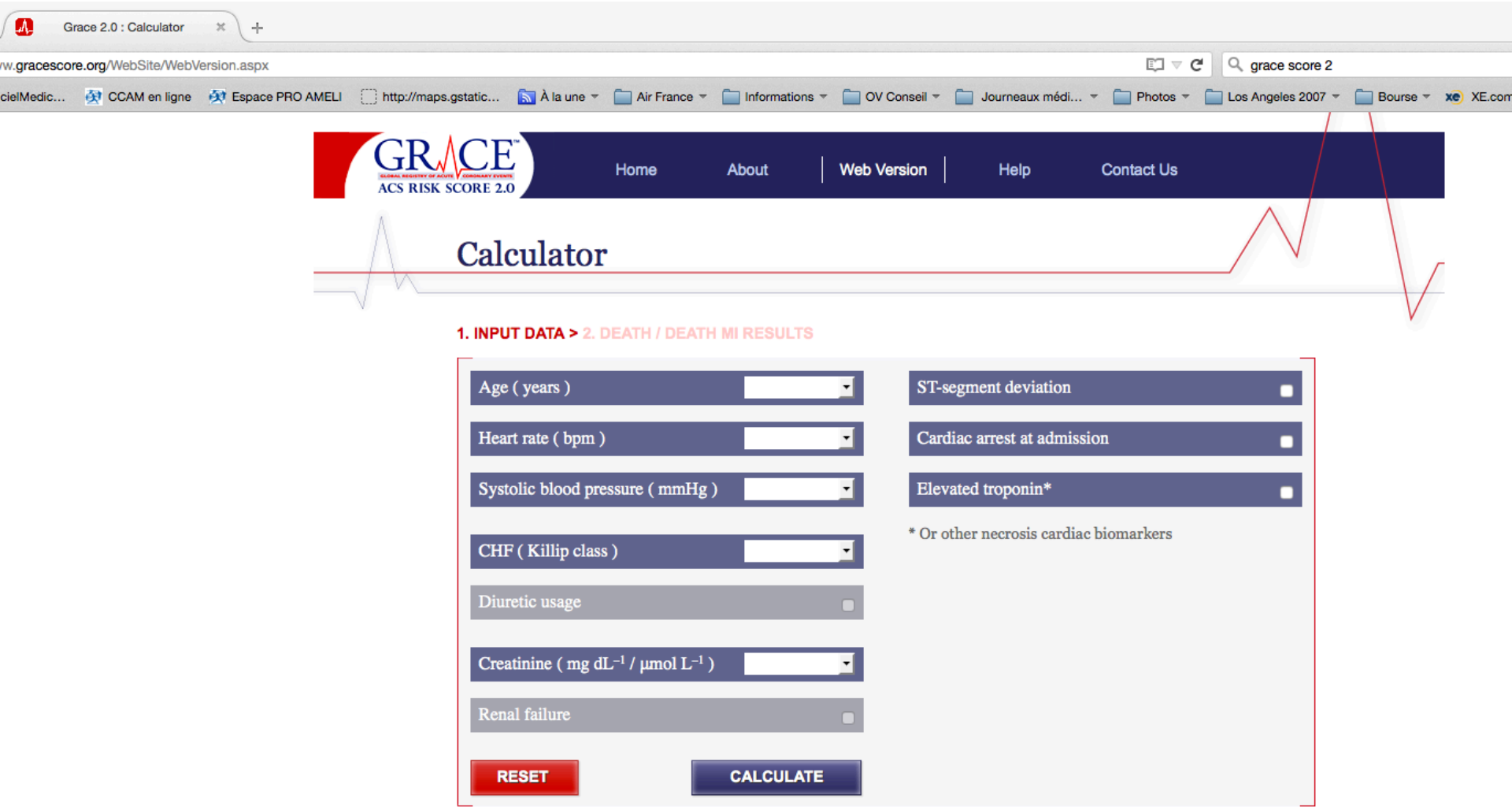
Patient

- Diabétique, hypertendu agé de 55 ans
- ATCD gastrite sous IPP
- Douleur thoracique compatible et dyspnée
- Tachycarde, hypoxie, insuffisance cardiaque
- ECG sous dec ST
- Troponine élevée
- Insuffisance rénale
- Trouble de la cinétique ETT

Scores

Recommendations	Class[a]	Level[b]
It is recommended to use established risk scores for prognosis estimation.	I	B

GRACE Risk Score



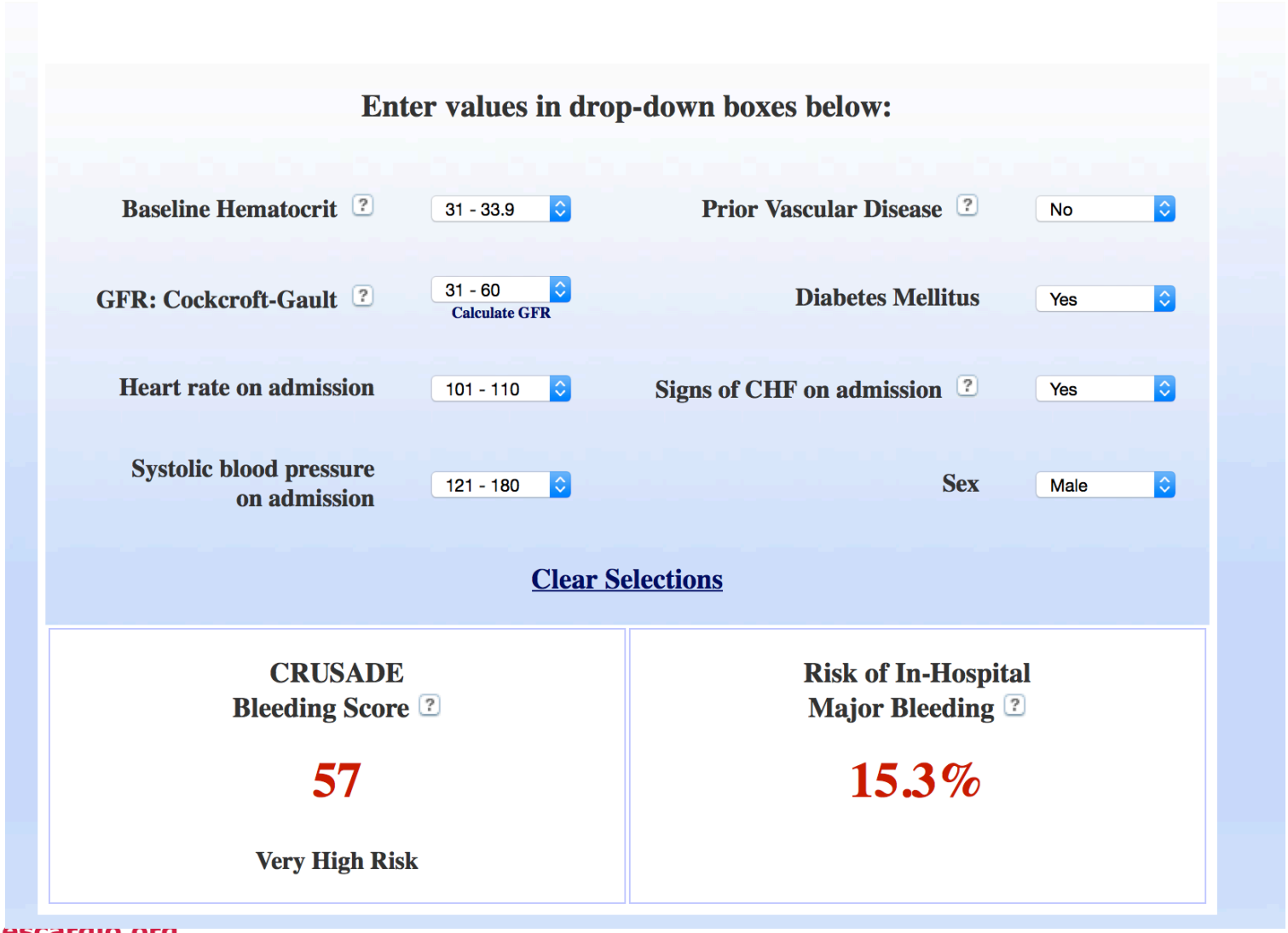
www.gracescore.org

GRACE Risk Score

Risk category (tertile)	GRACE risk score	In-hospital death (%)
Low	≤108	<1
Intermediate	109–140	1–3
High	>140	>3

Risk category (tertile)	GRACE risk score	Post-discharge to 6-month death (%)
Low	≤88	<3
Intermediate	89–118	3-8
High	>118	>8

Evaluation du risque de saignement



http://www.crusadebleedingscore.org/

Traitement médical

Recommendations for anti-ischaemic drugs in the acute phase of NSTE-ACS		
Recommendations	**Class[a]**	**Level[b]**
Early initiation of beta-blocker treatment is recommended in patients with ongoing ischaemic symptoms and without contraindications.	I	B
It is recommended to continue chronic beta-blocker therapy, unless the patient is in Killip Class III or higher.	I	B
Sublingual or i.v. nitrates are recommended to relieve angina[c]; i.v. treatment is recommended in patients with recurrent angina, uncontrolled hypertension or signs of heart failure.	I	C
In patients with suspected/confirmed vasospastic angina, calcium channel blockers and nitrates should be considered and beta-blockers avoided.	IIa	B

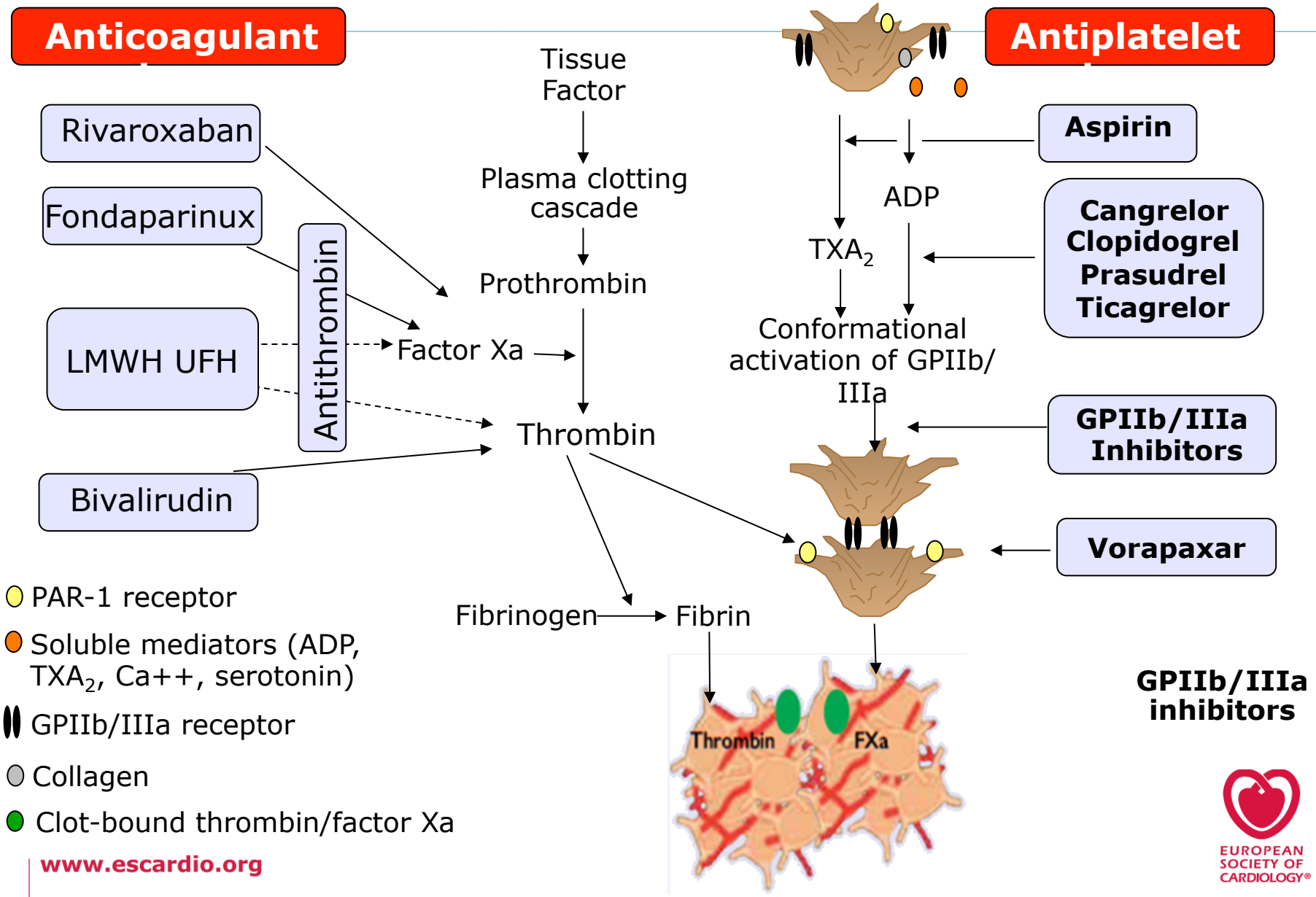
i.v.=intravenous. - [a]Class of recommendation. [b]Level of evidence. [c]Should not be administered in patients with recent intake of sildenafil or vardenafil (<24 h) or of tadalafil (<48 h).

http://www.crusadebleedingscore.org/

Traitement

- Hospitalisation USIC
- Perfusion G2,5%, oxygène
- Trinitrine IV, furosémide
- Béta bloquant prudemment (pas en poussée IC)
- IPP++++

Targets for antithrombotic drugs



Aspirine

Recommendations	Class[a]	Level[b]
Oral antiplatelet therapy		
Aspirin is recommended for all patients without contraindications at an initial oral loading dose[d] of 150–300 mg (in aspirin-naive patients) and a maintenance dose of 75–100 mg/day long-term regardless of treatment strategy.	I	A

Anti P2Y12

Recommendations	Class[a]	Level[b]
Oral antiplatelet therapy		
A $P2Y_{12}$ inhibitor is recommended, in addition to aspirin, for 12 months unless there are contraindications such as excessive risk of bleeds.	I	A
• Ticagrelor (180 mg loading dose, 90 mg twice daily) is recommended, in the absence of contraindications,[e] for all patients at moderate-to-high risk of ischaemic events (e.g. elevated cardiac troponins), regardless of initial treatment strategy and including those pretreated with clopidogrel (which should be discontinued when ticagrelor is started).	I	B
• Prasugrel (60 mg loading dose, 10 mg daily dose) is recommended in patients who are proceeding to PCI if no contraindication.[e]	I	B
• Clopidogrel (300–600 mg loading dose, 75 mg daily dose) is recommended for patients who cannot receive ticagrelor or prasugrel or who require oral anticoagulation.	I	B

HBPM

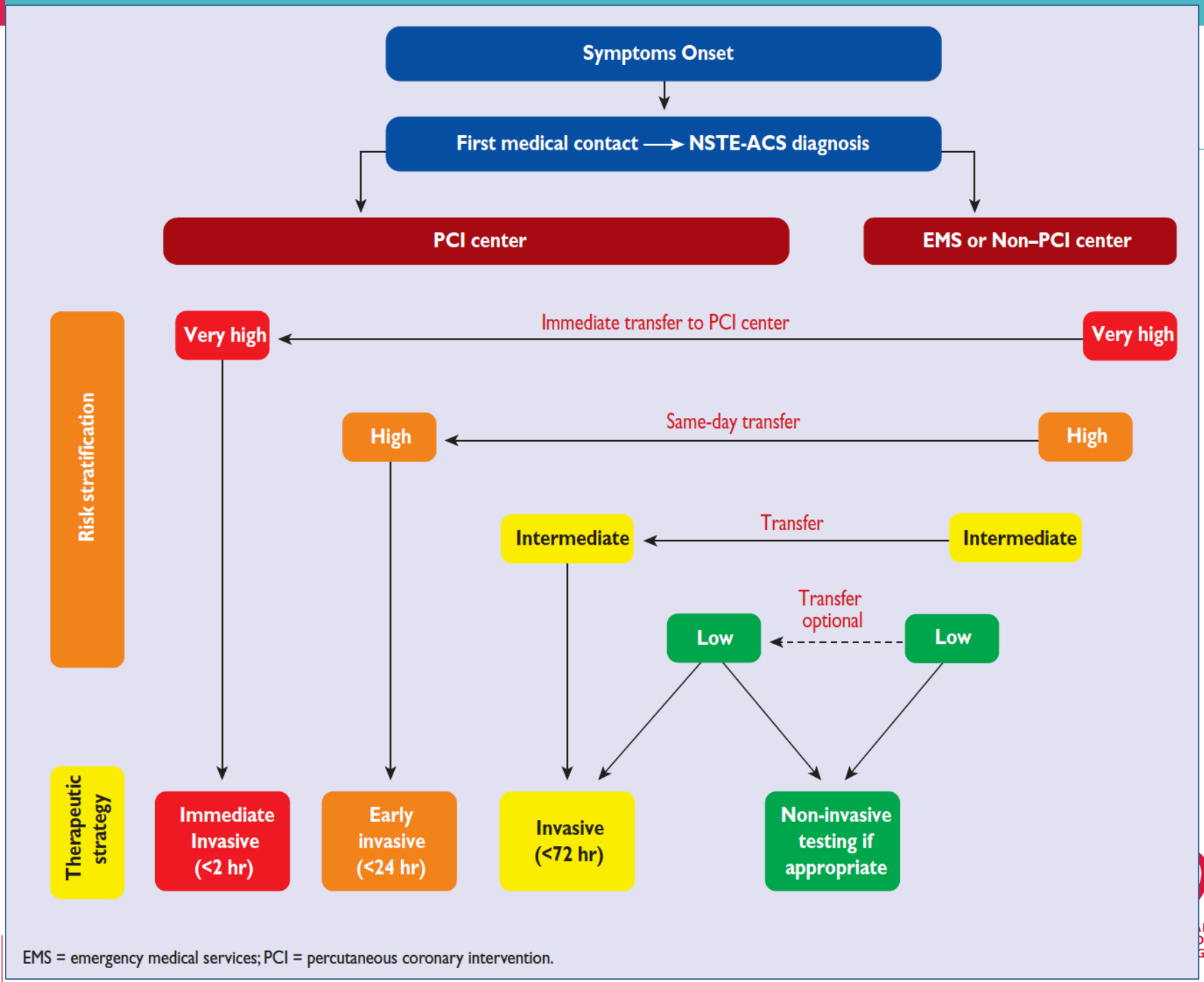
Recommendations	Class[a]	Level[b]
Parenteral anticoagulation is recommended at the time of diagnosis according to both ischaemic and bleeding risks.	I	B
Fondaparinux (2.5 mg s.c. daily) is recommended as having the most favourable efficacy–safety profile regardless of the management strategy.	I	B
Bivalirudin (0.75 mg/kg i.v. bolus, followed by 1.75 mg/kg/h for up to 4 h after the procedure) is recommended as an alternative to UFH plus GPIIb/IIIa inhibitors during PCI.	I	A
UFH 70–100 IU/kg i.v. (50–70 IU/kg if concomitant with GPIIb/IIIa inhibitors) is recommended in patients undergoing PCI who did not receive any anticoagulant.	I	B
In patients on fondaparinux (2.5 mg s.c. daily) undergoing PCI, a single i.v. bolus of UFH (70–85 IU/kg, or 50–60 IU/kg in the case of concomitant use of GPIIb/IIIa inhibitors) is recommended during the procedure.	I	B
Enoxaparin (1 mg/kg s.c. twice daily) or UFH are recommended when fondaparinux is not available.	I	B

Anti GpIIbIIIa

Recommendations	Class[a]	Level[b]
It is not recommended to administer GPIIb/IIIa inhibitors in patients in whom coronary anatomy is not known.	III	A

Traitement

- Hospitalisation USIC
- Perfusion G2,5%, oxygène
- Trinitrine IV, furosémide
- Béta bloquant (pas en poussée IC)
- IPP++++
- Aspirine 150mg IV
- Anti P2Y12 clopidogrel 300mg po (600mg)
- Héparine: enoxaparine 70mg/12h: attention IR



EMS = emergency medical services; PCI = percutaneous coronary intervention.

Coronarographie

An immediate invasive strategy (<2 h) is recommended in patients with at least one of the following very-high-risk criteria: – haemodynamic instability or cardiogenic shock – recurrent or ongoing chest pain refractory to medical treatment – life-threatening arrhythmias or cardiac arrest – mechanical complications of MI – acute heart failure with refractory angina or ST deviation – recurrent dynamic ST- or T-wave changes, particularly with intermittent ST-elevation.	I	C
An early invasive strategy (<24 h) is recommended in patients with at least one of the following high-risk criteria: – rise or fall in cardiac troponin compatible with MI – dynamic ST- or T-wave changes (symptomatic or silent) – GRACE score >140.	I	A

Coronarographie

Recommendations	Class[a]	Level[b]
In centres experienced with radial access, a radial approach is recommended for coronary angiography and PCI.	I	A
In patients undergoing PCI, new-generation DESs are recommended.	I	A

Coronarographie

- Voie radiale ++
- Ne pas refaire HNF/HBPM
- Lésions bitronculaires Cx et CD
- Score SYNTAX et SYNTAX II bas

Indication ATL

- Utilisation DES>BMS

Sortie

- Aspirine 75mg (pas indication 150mg)
- Clopidogrel 75mg (pas indication 150mg, durée 6 mois)
- Béta bloquants
- IEC
- Anticalciques (HTA)
- Statines fortes doses
- IPP+++
- Traitement diabète
- Prévention secondaire ++++

Durée DAPT

Recommendations	Class[a]	Level[b]
Long-term $P2Y_{12}$ inhibition		
$P2Y_{12}$ inhibitor administration in addition to aspirin beyond 1 year may be considered after careful assessment of the ischaemic and bleeding risks of the patient.	IIb	A

Durée DAPT

Recommendations	Class[a]	Level[b]
Oral antiplatelet therapy		
$P2Y_{12}$ inhibitor administration for a shorter duration of 3–6 months after DES implantation may be considered in patients deemed at high bleeding risk.	IIb	A

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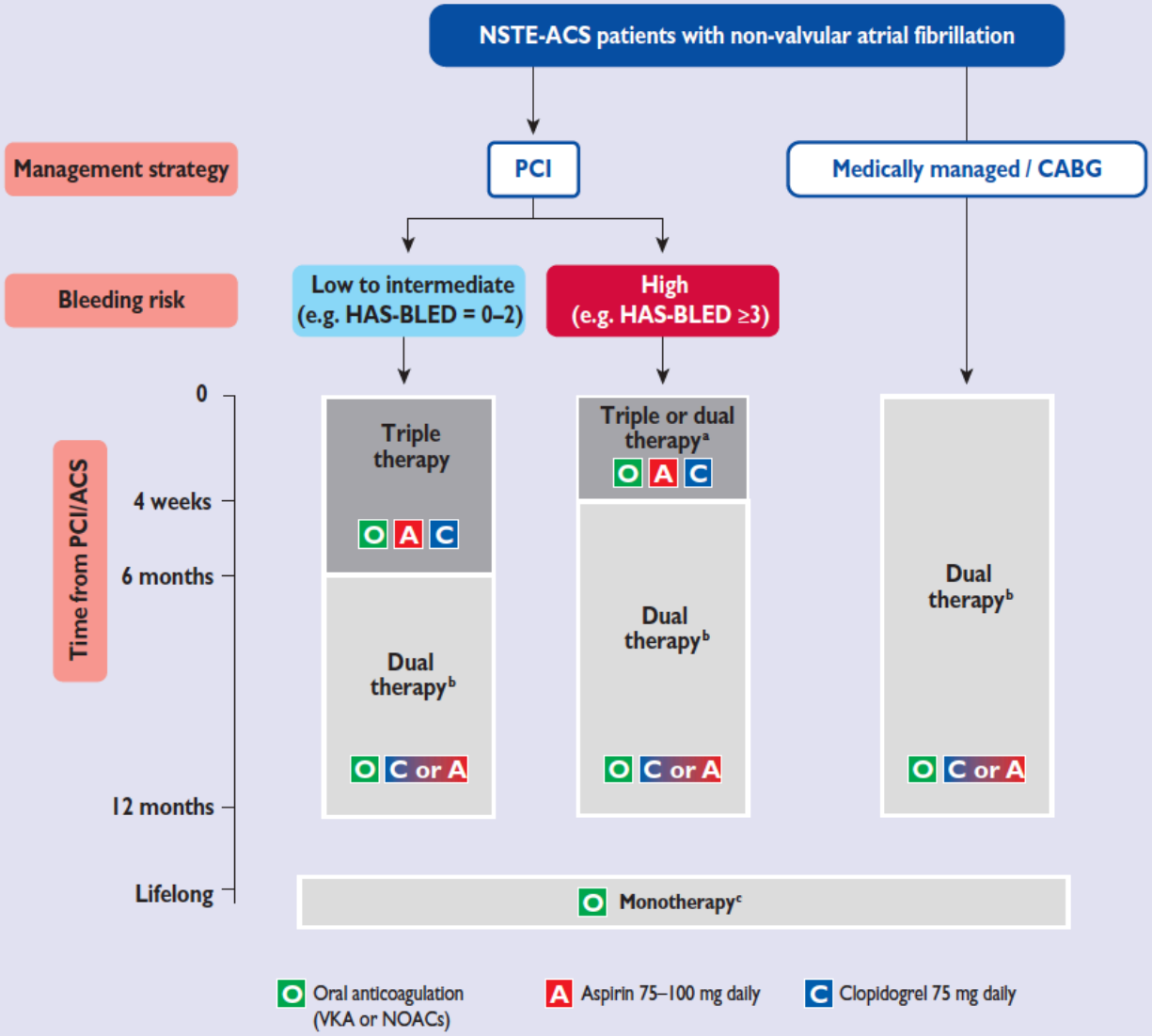

ACS = acute coronary syndrome; CABG = coronary artery bypass graft; CHA_2DS_2-VASc = Cardiac failure, Hypertension, Age ≥75 [2 points], Diabetes, Stroke [2 points] – Vascular disease, Age 65–74, Sex category; DAPT = dual antiplatelet therapy; NOACs = non-vitamin K antagonist oral anticoagulants; NSTE-ACS = non-ST-elevation acute coronary syndrome; PCI = percutaneous coronary intervention; VKAs = vitamin K antagonists. Adapted from Lip et al.[234]

[a]Dual therapy with oral anticoagulation and clopidogrel may be considered in selected patients (low ischaemic risk).

[b]aspirin as an alternative to clopidogrel may be considered in patients on dual therapy (i.e., oral anticoagulation plus single antiplatelet); triple therapy may be considered up to 12 months in patients at very high risk for ischaemic events.

[c]Dual therapy with oral anticoagulation and an antiplatelet agent (aspirin or clopidogrel) beyond one year may be considered in patients at very high risk of coronary events. In patients undergoing coronary stenting, dual antiplatelet therapy may be an alternative to triple or a combination of anticoagulants and single antiplatelet therapy if the CHA_2DS_2-VASc score is 1 (males) or 2 (females).

GRACE Risk Score

Risk category (tertile)	GRACE risk score	In-hospital death (%)
Low	≤108	<1
Intermediate	109–140	1–3
High	>140	>3
Risk category (tertile)	**GRACE risk score**	**Post-discharge to 6-month death (%)**
Low	≤88	<3
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(Antman, JAMA 2000)

European Heart Journal (2014) 35, 2383–2431 doi: 10.1093/eurheartj/ehu282

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Conditions other than Type 1 acute myocardial infarction associated with cardiac troponin elevation
Tachyarrhythmias
Heart failure
Hypertensive emergencies
Critical illness (e.g. shock/ sepsis/ burns)
Myocarditis[a]
Tako-Tsubo cardiomyopathy
Structural heart disease (e.g. aortic stenosis)
Aortic dissection
Pulmonary embolism, pulmonary hypertension
Renal dysfunction and associated cardiac disease
Coronary spasm
Acute neurological event (e.g. stroke or subarachnoid haemorrhage)
Cardiac contusion or cardiac procedures (**CABG**, **PCI**, ablation, pacing, cardioversion, or endomyocardial biopsy)
Hypo- and hyperthyroidism
Infiltrative diseases (e.g. amyloidosis, haemochromatosis, sarcoidosis, scleroderma)
Myocardial drug toxicity or poisoning (e.g. doxorubicin, **5**-fluorouracil, herceptin, snake venoms)
Extreme endurance efforts
Rhabdomyolysis

CABG = coronary artery bypass surgery; PCI = percutaneous coronary intervention.
[a]Includes myocardial extension of endocarditis or pericarditis.
Bold and italic: the most frequent conditions.

al (2014) 35, 2383–2431 doi:
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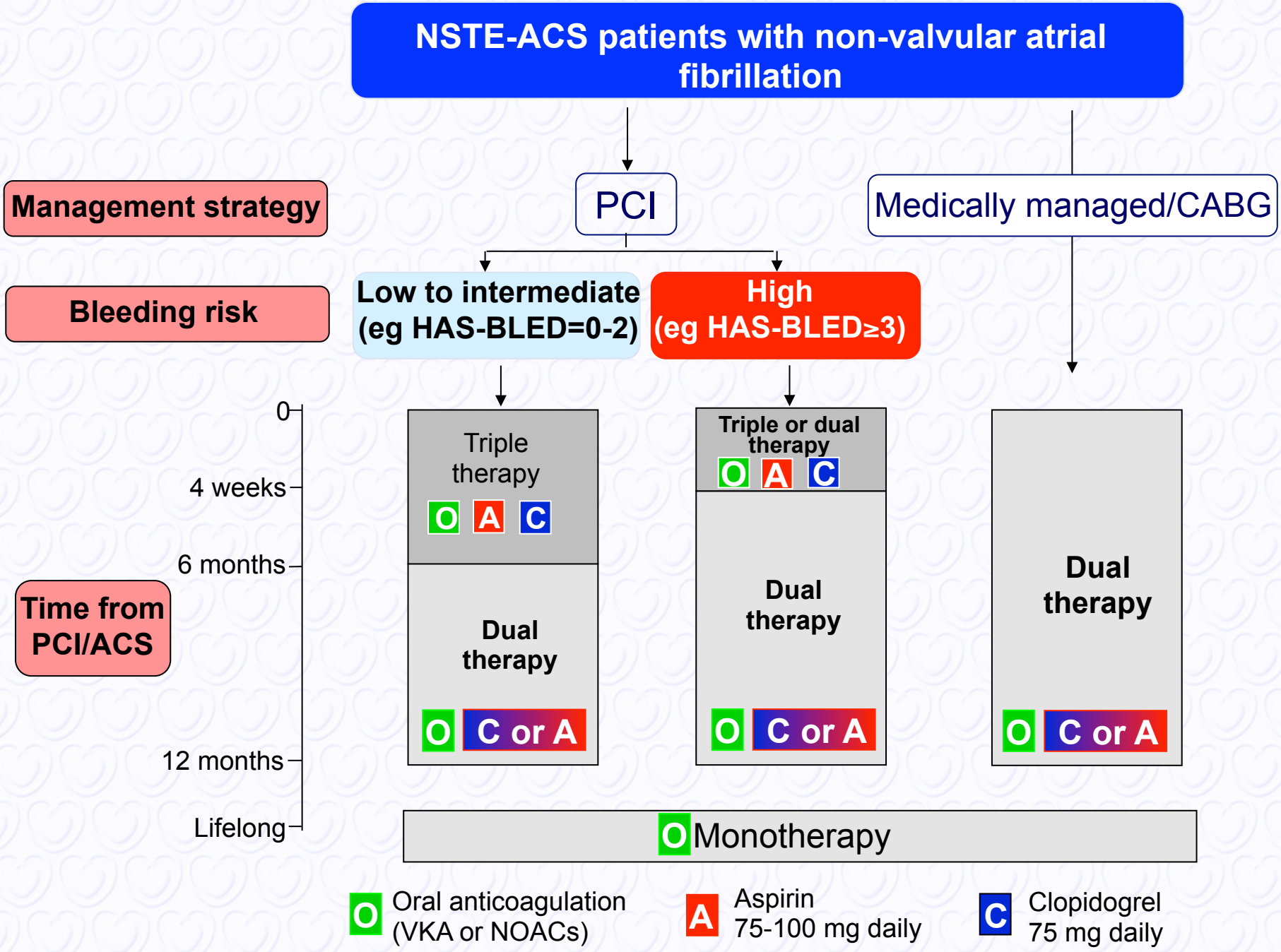
NSTE-ACS patients with non-valvular atrial fibrillation
Management strategy
PCI
Medically managed/CABG
Bleeding risk
Low to intermediate (eg HAS-BLED=0-2)
High (eg HAS-BLED≥3)
Time from PCI/ACS
0
4 weeks
6 months
12 months
Lifelong
Triple therapy
O A C
Dual therapy
O C or A
Triple or dual therapy
O A C
Dual therapy
O C or A
Dual therapy
O C or A
O Monotherapy
O Oral anticoagulation (VKA or NOACs)
A Aspirin 75-100 mg daily
C Clopidogrel 75 mg daily