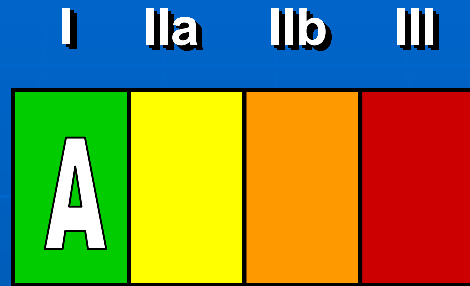
PERCORSO SINDROMI CORONARICHE ACUTE

Cosa ci dicono le linee guida ?

STEMI

2014 ESC/EACTS Guidelines on myocardial revascularization

2012 - ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation



Reperfusion therapy is indicated in all patients with time from symptom onset <12 hours duration and persistent STsegment elevation or (presumed) new LBBB.

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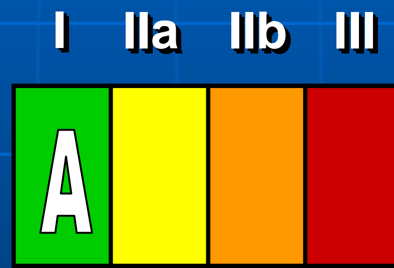
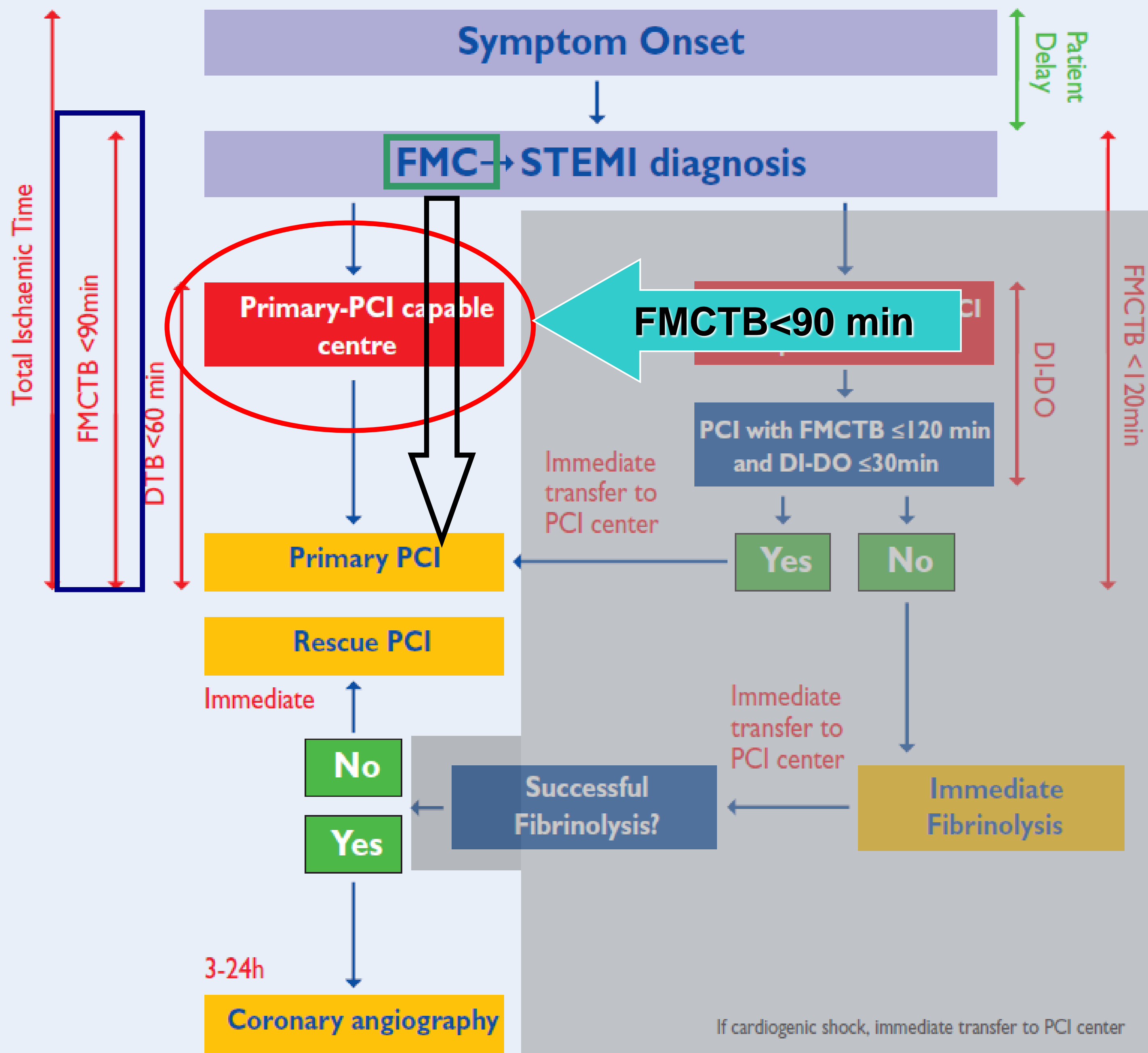
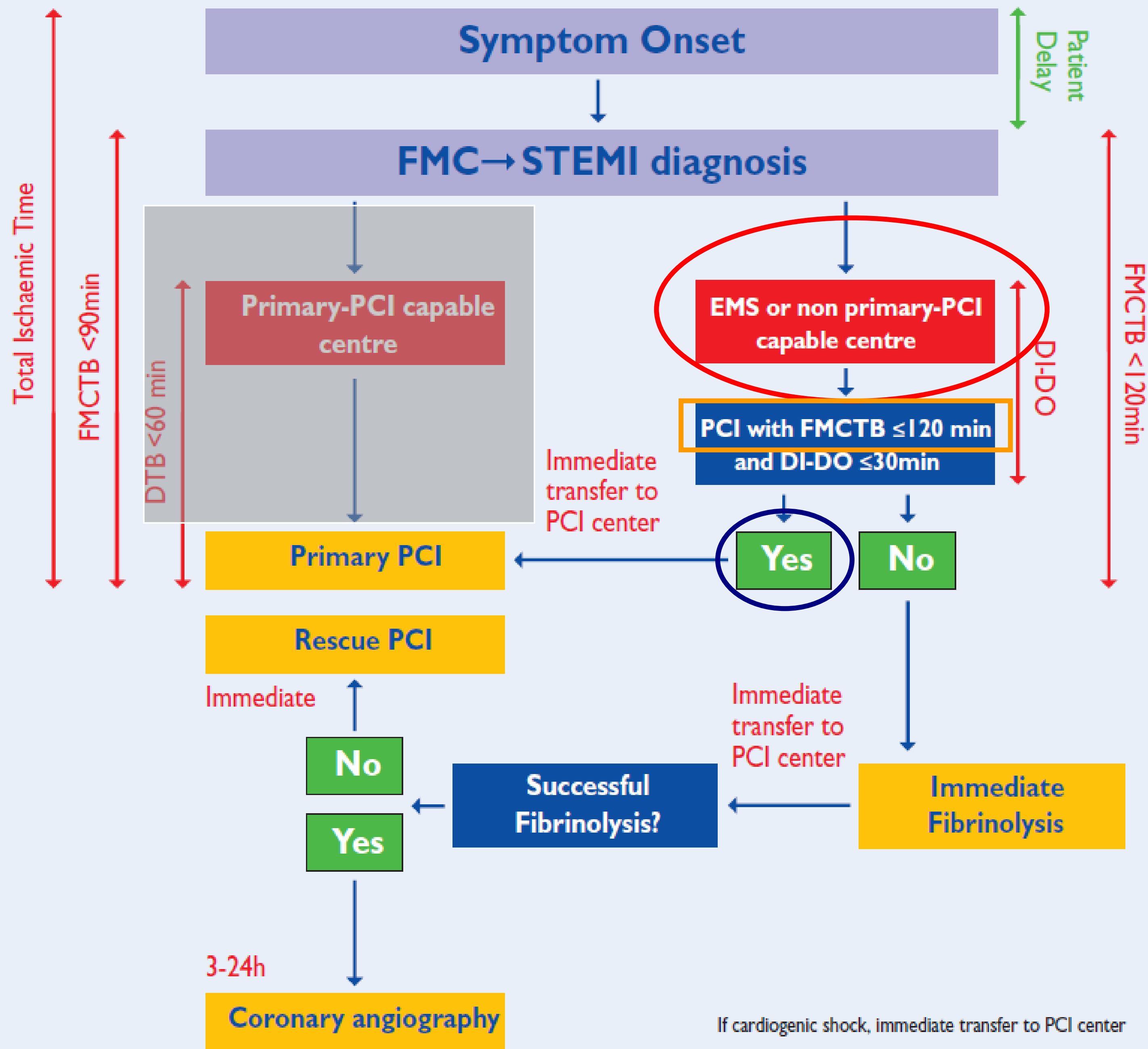


Primary PCI is the recommended reperfusion therapy over fibrinolysis if performed by an experienced team in a timely fashion.


Symptom Onset
Patient Delay
FMC→STEMI diagnosis
Total Ischaemic Time
FMCTB <90min
DTB <60 min
Primary-PCI capable centre
FMCTB<90 min
DI-DO
FMCTB <120min
PCI with FMCTB ≤120 min and DI-DO ≤30min
Immediate transfer to PCI center
Yes
No
Primary PCI
Rescue PCI
Immediate
No
Yes
Successful Fibrinolysis?
Immediate transfer to PCI center
Immediate Fibrinolysis
3-24h
Coronary angiography
If cardiogenic shock, immediate transfer to PCI center
DI-DO = door-in to door-out time; DTB = door-to-balloon time; EMS = emergency medical service; FMC = first medical contact; FMCTB = first-medical-contact-to-balloon time; PCI = percutaneous coronary intervention; STEMI = ST-segment elevation myocardial infarction.



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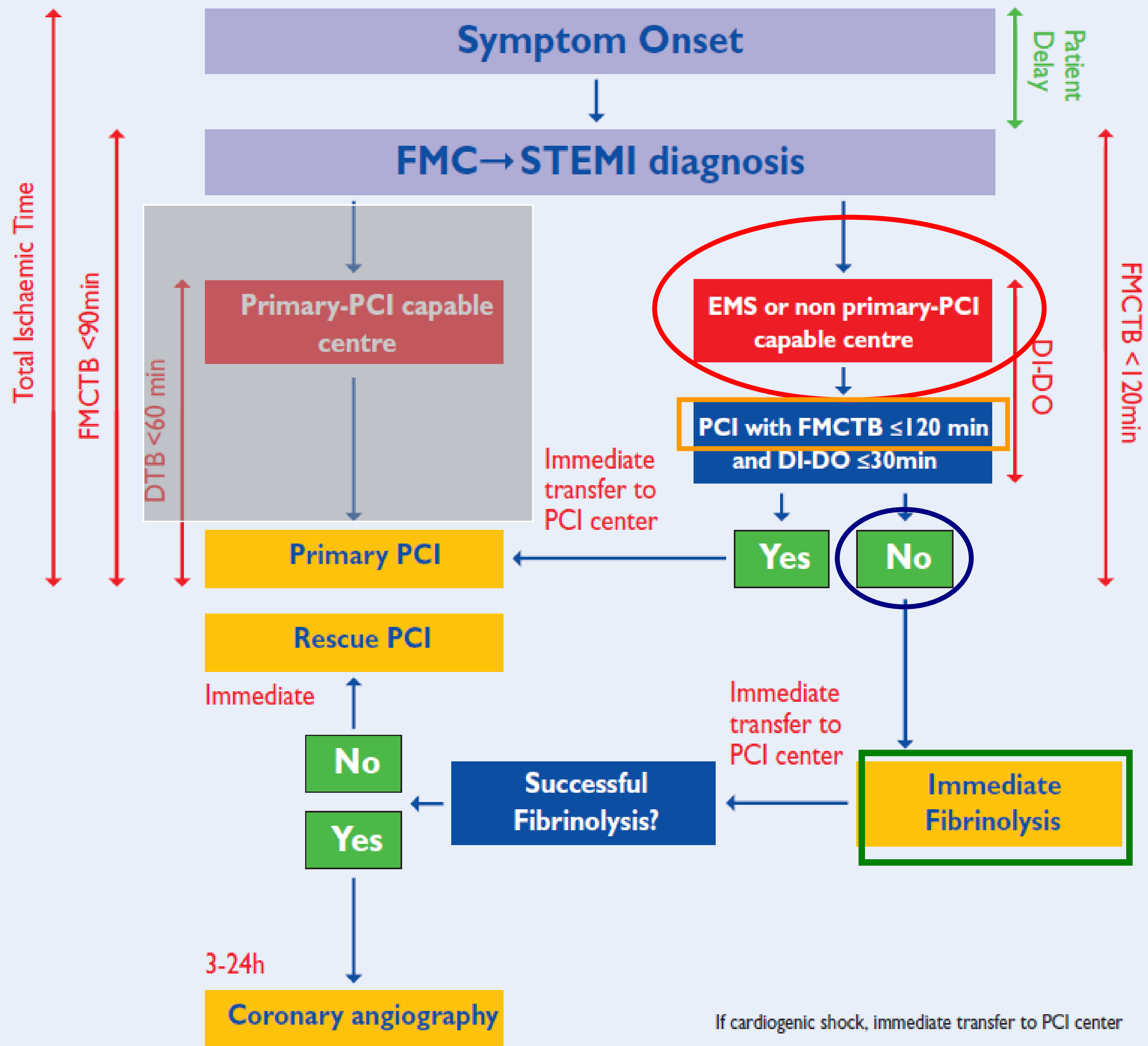

Symptom Onset
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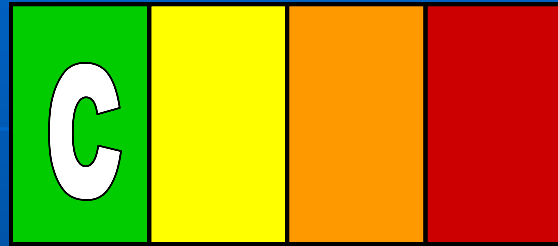
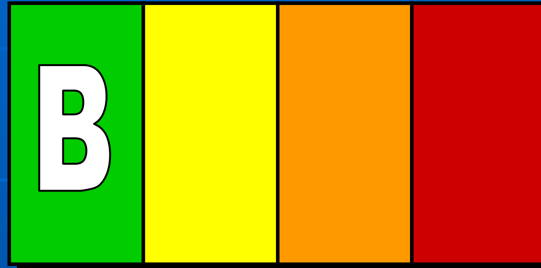
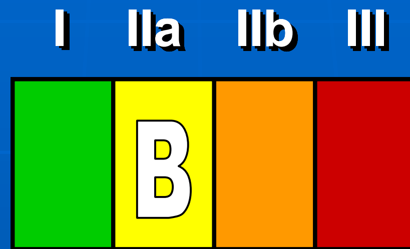


In patients with time from symptom onset >12 hours, primary PCI is indicated in the presence of continuing ischaemia, life-threatening arrhythmias or if pain and ECG changes have been stuttering.



Primary PCI is indicated for patients with severe acute heart failure or cardiogenic shock due to STEMI independent from time delay of symptom onset



Reperfusion therapy with primary PCI should be considered in patients presenting late (12–48 hours) after symptom onset.

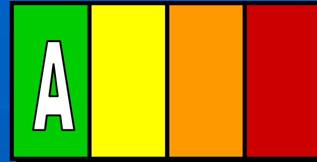
- **Busk M, et al:** Infarct size and myocardial salvage after primary angioplasty in patients presenting with symptoms for ,12 h vs. 12–72 h. Eur Heart J 2009.
- **Schomig A, et al:** Mechanical reperfusion in patients with acute myocardial infarction presenting more than 12 hours from symptom onset: a randomized controlled trial. JAMA 2005

PRIMARY PERCUTANEOUS CORONARY INTERVENTION

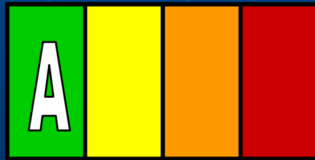
Per PCI primaria si intende la procedura percutanea eseguita nel contesto dello STEMI senza precedente o concomitante fibrinolisi

ANTIPLATELET THERAPY

ANTIPLATELET THERAPY

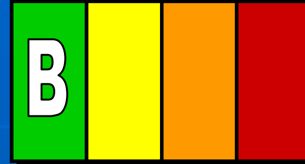


ASA is recommended for all patients without contraindications at an initial oral loading dose of 150–300 mg (or 80–150 mg i.v.) and at a maintenance dose of 75–100 mg daily long-term regardless of treatment strategy



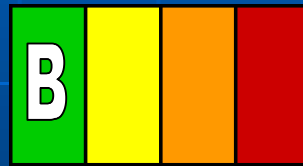
A P2Y12 inhibitor is recommended in addition to ASA and maintained over 12 months unless there are contraindications such as excessive risk of bleeding

ANTIPLATELET THERAPY



It is recommended to give P2Y12 inhibitors <u>at the time of first medical contact</u>

OPTION ARE:

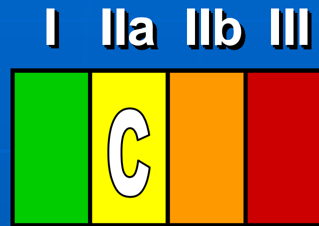


Prasugrel (60 mg loading dose, 10 mg daily dose) if no contraindication

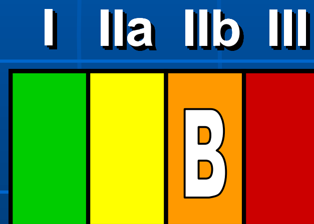
Ticagrelor (180 mg loading dose, 90 mg twice daily) if no contraindication

Clopidogrel (600 mg loading dose, 75 mg daily dose), <u>only when prasugrel or ticagrelor are not available or are contraindicated</u>

ANTIPLATELET THERAPY



GP IIb/IIIa inhibitors should be considered for bail-out or evidence of no-reflow or a thrombotic complication



Upstream use of a GP IIb/IIIa inhibitor (vs. in-lab use) may be considered in high-risk patients undergoing transfer for primary PCI

ANTICOAGULANTS

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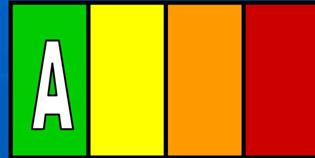
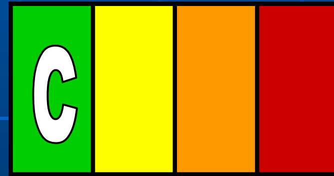
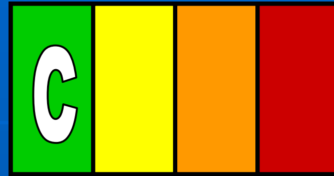


Anticoagulation is recommended for all patients in addition to antiplatelet therapy during PCI

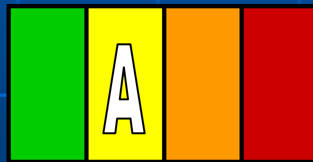


The anticoagulation is selected according to both ischaemic and bleeding risks, and according to the efficacy–safety profile of the chosen agent

ANTICOAGULANTS



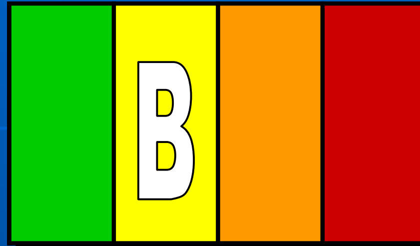
<u>Unfractionated heparin</u>: 70–100 U/kg i.v. bolus when no GP IIb/IIIa inhibitor is planned 50–70 U/kg i.v. bolus with GPIIb/IIIa inhibitor



Bivalirudin 0.75 mg/kg i.v. bolus followed by i.v. infusion of 1.75 mg/kg/h for up to 4 hours after the procedure

ANTICOAGULANTS

I IIa IIb III



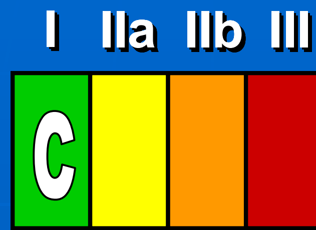
Enoxaparin i.v. 0.5 mg/kg with or without GP IIb/IIIa inhibitor

NSTEMI

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

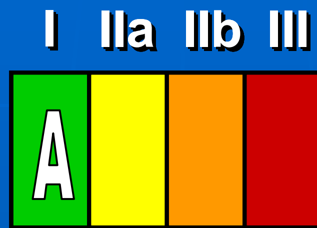
2011 -ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation

INVASIVE STRATEGY



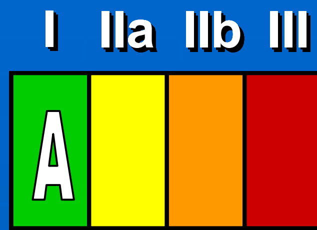
AN IMMEDIATE INVASIVE STRATEGY (<2 h) is recommended in patients **with at least one** of the following **very-high-risk criteria**

• 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
• Recurrent dynamic ST-T wave changes, particularly with intermittent ST-elevation



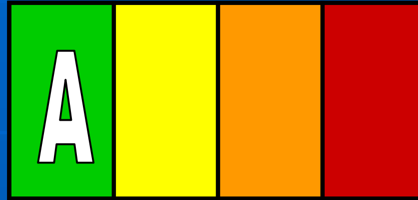
AN EARLY INVASIVE STRATEGY (<24 h) is recommended in patients with **at least one** of the following **high-risk criteria**

• Rise or fall in cardiac troponin compatible with MI
• Dynamic ST- or T-wave changes (symptomatic or silent)
• GRACE score >140



AN INVASIVE STRATEGY(<72 h) is recommended in patients with **at least one** of the following **intermediate-risk criteria:**

- Diabetes mellitus
- Renal insufficiency (eGFR <60 mL/min/1.73 m²)
- LVEF <40% or congestive heart failure
- Early post-infarction angina
- Prior PCI
- Prior CABG
- GRACE risk score >109 and <140
- or recurrent symptoms or ischaemia on non-invasive testing



In patients with **none of the above mentioned risk criteria** and **no recurrent symptoms**, non-invasive testing for ischaemia (preferably with imaging) is recommended before deciding on an invasive evaluation

ANTIPLATELET THERAPY

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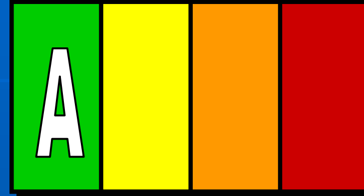
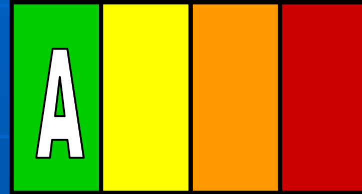


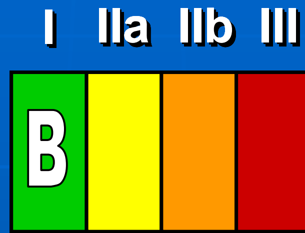
Aspirin is recommended for all patients without contraindications at an initial oral loading dosed of 150–300 mg (in aspirin-naive patients) and a maintenance dose of 75–100 mg/day long-term regardless of treatment strategy

ANTIPLATELET THERAPY



A P2Y12 inhibitor is recommended, in addition to aspirin, for 12 months unless there are contraindications such as excessive risk of bleeds

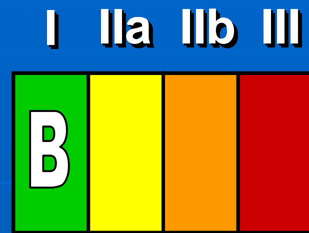
ANTIPLATELET THERAPY



Ticagrelor **(180 mg loading dose, 90 mg twice daily) is recommended, in the absence of contraindications, 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)**

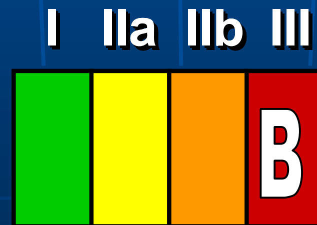
Contraindications for ticagrelor: previous intracranial haemorrhage or ongoing bleeds

ANTIPLATELET THERAPY



Prasugrel (60 mg loading dose, 10 mg daily dose) is recommended in patients who are proceeding to PCI if no contraindication

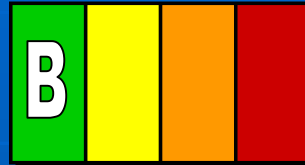
Contraindications for prasugrel: previous intracranial haemorrhage, previous ischaemic stroke or transient ischaemic attack or ongoing bleeds; prasugrel is generally not recommended for patients ≥75 years of age or with a bodyweight < 60 kg



It is not recommended to administer prasugrel in patients in whom coronary anatomy is not known

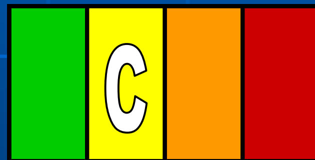
ANTIPLATELET THERAPY

I IIa IIb III



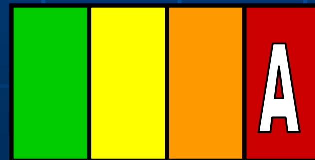
<u>Clopidogrel</u> (300–600 mg loading dose, 75 mg daily dose) is recommended for patients who cannot receive ticagrelor or prasugrel **<u>or who require oral anticoagulation.</u>**

I IIa IIb III



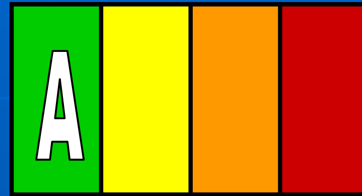
GPIIb/IIIa inhibitors <u>during PCI</u> should be considered for bailout situations or thrombotic complications

I IIa IIb III



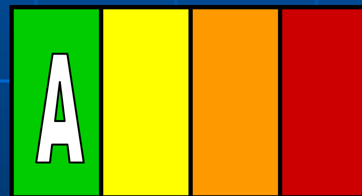
<u>It is not recommended</u> to administer GPIIb/IIIa inhibitors in patients in whom coronary anatomy is not known

PRETREATMENT



A P2Y12 inhibitor is recommended, in addition to aspirin, for 12 months unless there are contraindications such as excessive risk of bleeds

2011 ESC NSTEMI guidelines



A P2Y12 inhibitor should be added to aspirin <u>as soon as possible</u> and maintained over 12 months, unless there are contraindications such as excessive risk of bleeding

PRETREATMENT

PCI-CURE
6 days

RITA-3
3 days

CRUSADE
23 hours

ACUITY
20 hours

CHAMPION PLATFORM
7 hours

CURRENT OASIS 7 NSTE-ACS
3 hours

TRACER
4 hours

ACCOAST
4 hours

Time to coronary angiography

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

NSTE-ACS:
Timing to Coro

Mediana
57.5 [28.0-97.2] hrs

Mediana
29.4 [15.7-64.8] hrs

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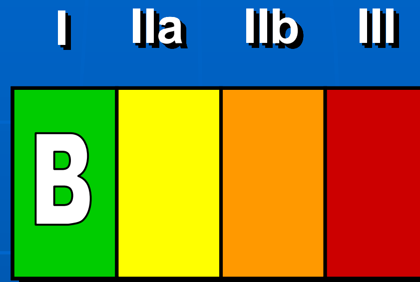
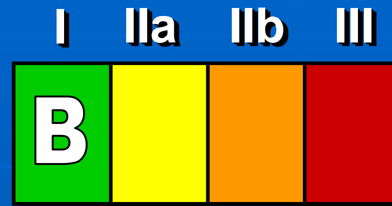
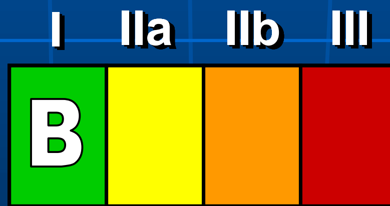


Parenteral anticoagulation is recommended at the time of diagnosis according to both ischaemic and bleeding risks

ANTICOAGULANTS

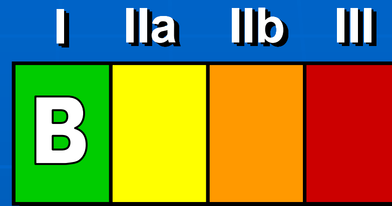


Fondaparinux (2.5 mg s.c. daily) is recommended as having the most favourable efficacy–safety profile <u>regardless of the management strategy</u>

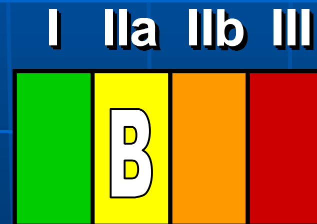


In patients on fondaparinux (2.5 mg s.c. daily) <u>undergoing PCI</u>, a single i.v. bolus of UFH (70–85 IU/kg, or 50–60 IU/kg in the case of concomitant use of GPIIb/IIIa inhibitors) is recommended during the procedure

ANTICOAGULANTS

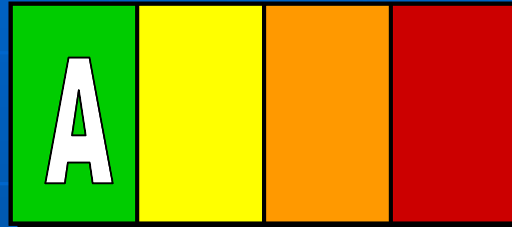


Enoxaparin (1 mg/kg s.c. twice daily) or UFH are recommended when fondaparinux is not available



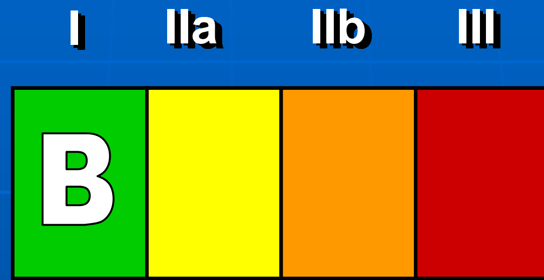
Enoxaparin should be considered as an anticoagulant for PCI in patients pretreated with s.c. enoxaparin

ANTICOAGULANTS



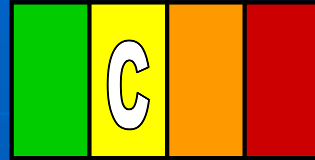
Bivalirudin (0.75 mg/kg i.v. bolus, followed by 1.75 mg/kg/h for up to 4 h after the procedure) is recommended as an alternative to UFH plus GPIIb/IIIa inhibitors during PCI

ANTICOAGULANTS

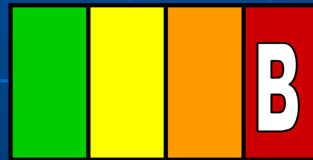


UFH 70–100 IU/kg i.v. (50–70 IU/kg if concomitant with GPIIb/IIIa inhibitors) is recommended in patients undergoing PCI who did not receive any anticoagulant

ANTICOAGULANTS



Discontinuation of anticoagulation should be considered after PCI, unless otherwise indicated



Crossover between UFH and LMWH is not recommended