

2018 ESC/EACTS Guidelines on myocardial revascularization

● Tabarka 26 oct 2018

Table of contents

Diagnostic tools to guide myocardial revascularization

Process for **decision-making** and **patient information**

Revascularization for:

Stable angina, NSTEMI, STEMI

Pts with heart failure, diabetes, CKD, valves, PAD, arrhythmias

Repeat revascularization

Procedural aspects: CABG and PCI

Antithrombotic treatment

Volume–outcome relationship for revascularization procedures

Medical therapy, secondary prevention, and strategies for **follow-up**

What is new in the 2018 Guidelines?

New recommendations

Calculation of the Syntax Score if left main or multivessel revascularization is considered.

Radial access as standard approach for coronary angiography and PCI.

DES for any PCI.

Systematic re-evaluation of patients after myocardial revascularization.

Stabilised NSTEMI-ACS patients: revascularization strategy according to principles for SCAD.

Use of the radial artery grafts over saphenous vein grafts in patients with high-degree stenosis.

Myocardial revascularization in patients with CAD, heart failure, and **LVEF $\leq 35\%$.**

CABG preferred

PCI as alternative to CABG

Pre - and post-hydration with isotonic saline in patients with moderate or severe CKD if the expected contrast volume is **>100 mL**

Completeness of revascularization prioritized, when considering **CABG** vs PCI

NOAC preferred over VKA in patients with non-valvular AF requiring anticoagulation and antiplatelet treatment

No-touch vein technique, if open vein harvesting for CABG

Annual operator volume for left main PCI of at least **25 cases per year**

	Class I		Class IIa
---	---------	---	-----------

What is new in the 2018 Guidelines?

New recommendations

Double-kissing crush technique preferred over provisional T-stenting in true **left main** bifurcations

Cangrelor in P2Y₁₂-inhibitor **naïve** patients undergoing PCI

GP IIb/IIIa inhibitors for PCI in P2Y₁₂-inhibitor **naïve** patients with ACS undergoing PCI

Dabigatran 150-mg dose preferred over 110-mg dose when combined with single antiplatelet therapy after PCI

De-escalation of P2Y₁₂-inhibitor **guided by platelet function** testing in ACS patients

Routine non-invasive imaging surveillance in high-risk patients **6 months after** revascularization

Routine revascularization of non-IRA lesions in myocardial infarction with cardiogenic shock

Current generation **BRS** for clinical use outside clinical studies

Changes compared with the 2014 version of the Myocardial Revascularization Guidelines that were due to updates for consistency with other ESC Guidelines published since 2014 are not shown.

Class IIb

Class III

What is new in the 2018 Guidelines?

Changes in class of recommendations

UPGRADES
For PCI of bifurcation lesions, stent implantation in the main vessel only , followed by provisional balloon angioplasty with or without stenting of the side branch
Immediate coronary angiography and revascularization, if appropriate, in survivors of out-of-hospital cardiac arrest and an ECG consistent with STEMI
Assess all patients for the risk of contrast-induced nephropathy
OCT for stent optimization

DOWNGRADES
Distal protection devices for PCI of SVG lesions
Bivalirudin for PCI in NSTEMI-ACS
Bivalirudin for PCI in STEMI
PCI for MVD with diabetes and SYNTAX score <23
Platelet function testing to guide antiplatelet therapy interruption in patients undergoing cardiac surgery
EuroSCORE II to assess in-hospital mortality after CABG

	Class I		Class IIa
	Class IIb		Class III

Evidence-based 'to do' and 'not to do' messages from the Guidelines

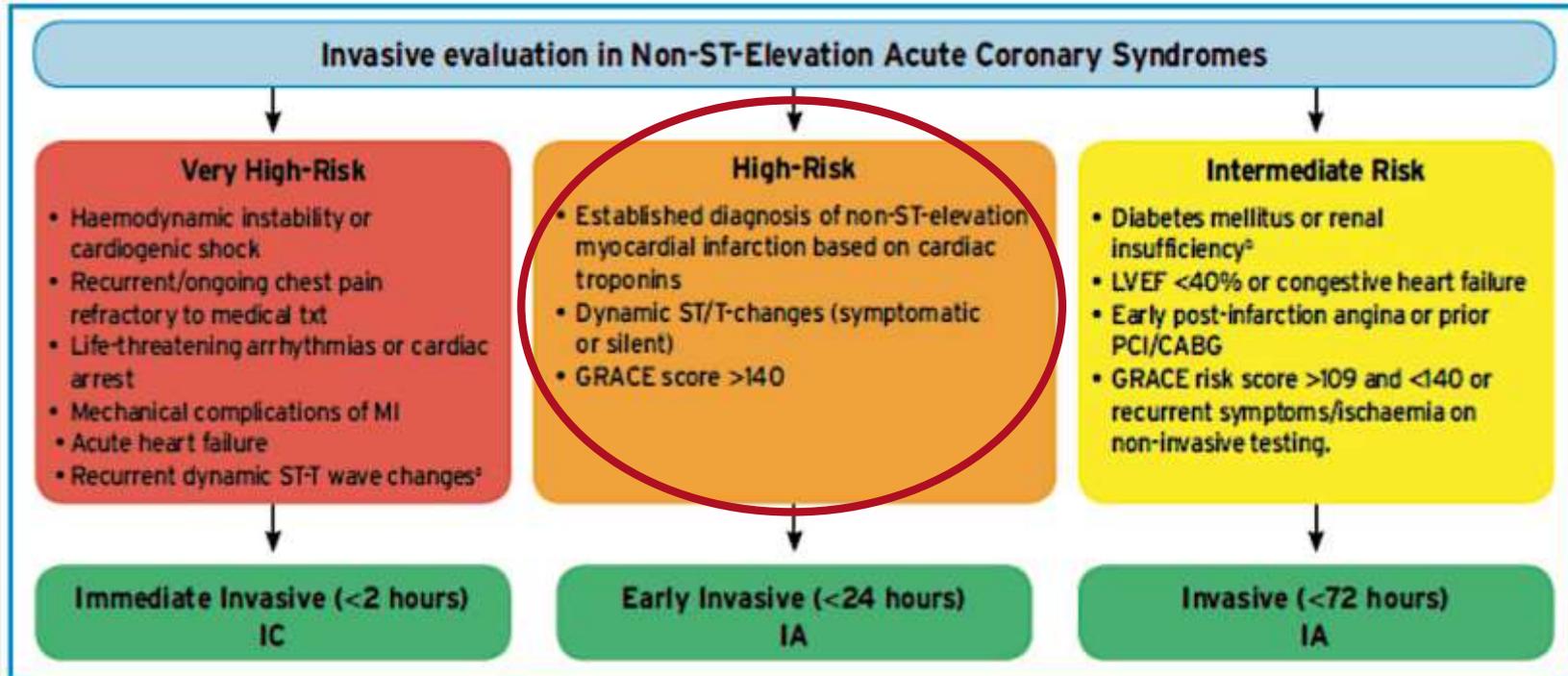
Revascularization in patient with stable angina

Indications for revascularization in patients with stable angina or silent ischaemia			
For prognosis	LM disease with stenosis >50%.	I	A
	Any proximal LAD stenosis >50%.	I	A
	Two- or three-vessel disease with stenosis >50% with impaired LV function (LVEF ≤35%).	I	A
	Large area of ischaemia detected by functional testing (>10% LV) or abnormal invasive FFR.	I	B
For symptoms	Any haemodynamically significant coronary stenosis in the presence of limiting angina or angina equivalent, with an insufficient response to optimized medical therapy.	I	A

Criteria for the choice between PCI and CABG

Recommendations	Class	Level
Assessment of surgical risk		
It is recommended that the STS score is calculated to assess in-hospital or 30 day mortality, and in-hospital morbidity after CABG.	I	B
Calculation of the EuroSCORE II score may be considered to assess in-hospital mortality after CABG.	IIb	B
Assessment of CAD complexity		
In patients with LM or multivessel disease, it is recommended that the SYNTAX score is calculated to assess the anatomical complexity of CAD and the long-term risk of mortality and morbidity after PCI.	I	B
When considering the decision between CABG and PCI, completeness of revascularization should be prioritized.	IIa	B

Revascularization in patient with NSTEMI



CABG = coronary artery bypass grafting; GRACE = Global Registry of Acute Coronary Events; LVEF = left ventricular ejection fraction; MI = myocardial infarction; PCI = percutaneous coronary intervention.

*Particularly intermittent ST-elevation; [‡]Estimated glomerular filtration rate <60mL/min/1.73m²

According to ESC NSTEMI-ACS 2015 Guidelines

Type of revascularization

In the setting of NSTEMI-ACS, there are no dedicated prospective studies on the revascularization strategy with multivessel disease. Thus, current recommendations (PCI or CABG) are based on an analogy to findings obtained in SCAD or STEMI.

Recommendations according to extent of CAD	CABG		PCI	
	Class	Level	Class	Level
Left main CAD				
Left main disease with low SYNTAX score (0-22).	I	A	I	A
Left main disease with intermediate SYNTAX score (23-32).	I	A	IIa	A
Left main disease with high SYNTAX score (≥ 33). ^a	I	A	III	B

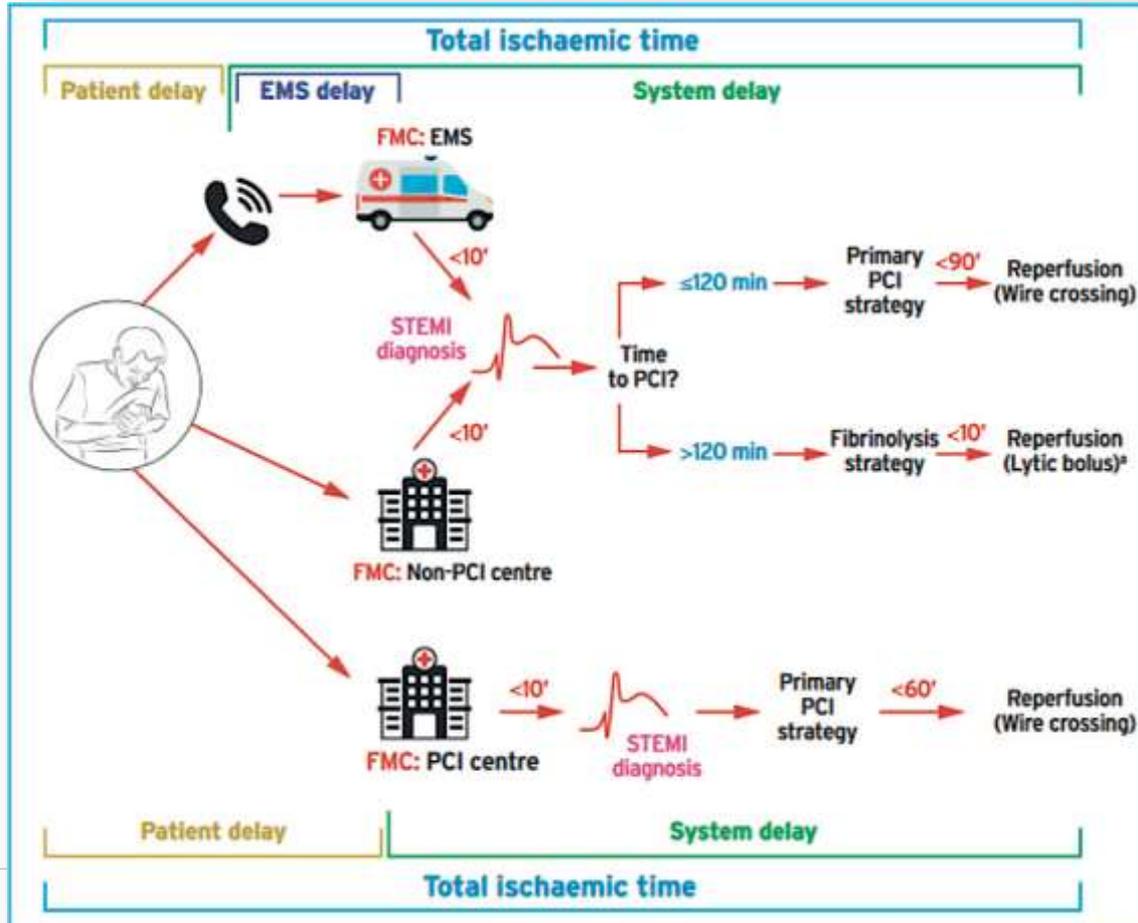
^aPCI should be considered, if the Heart Team is concerned about **the surgical risk** or if **the patient refuses CABG** after adequate counselling by the Heart Team.

Type of revascularization

Recommendations according to extent of CAD	CABG		PCI	
	Class	Level	Class	Level
Three-vessel CAD without diabetes mellitus				
Three-vessel disease with low SYNTAX score (0-22).	I	A	I	A
Three-vessel disease with intermediate or high SYNTAX score (>22). ^a	I	A	III	A
Three-vessel CAD with diabetes mellitus				
Three-vessel disease with low SYNTAX score (0-22).	I	A	IIb	A
Three-vessel disease with intermediate or high SYNTAX score (>22). ^a	I	A	III	A

^aPCI should be considered, if the Heart Team is concerned about **the surgical risk** or if **the patient refuses CABG** after adequate counselling by the Heart Team.

Revascularization in patient with STEMI

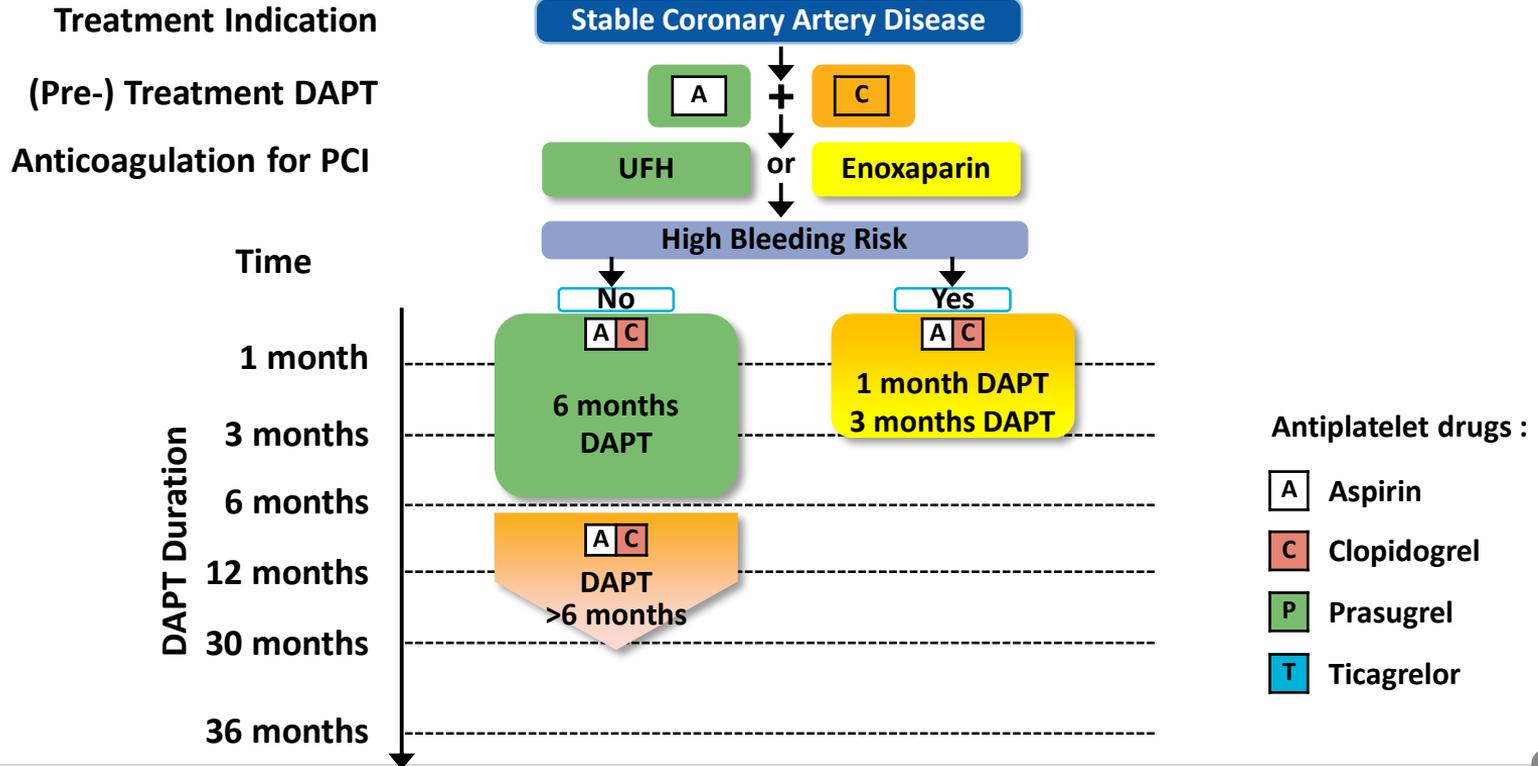


Revascularization in patient with cardiogenic shock

Revascularizations in patients with cardiogenic shock		
Emergency invasive evaluation is indicated in patients with acute heart failure or cardiogenic shock complicating ACS.	I	B
Emergency PCI is indicated for patients with cardiogenic shock due to STEMI or NSTEMI-ACS, independent of time delay of symptom onset, if coronary anatomy is amenable.	I	B
Emergency CABG is recommended for patients with cardiogenic shock if the coronary anatomy is not amenable to PCI.	I	B
Routine use of IABP in patients with cardiogenic shock due to ACS is not recommended.	III	B

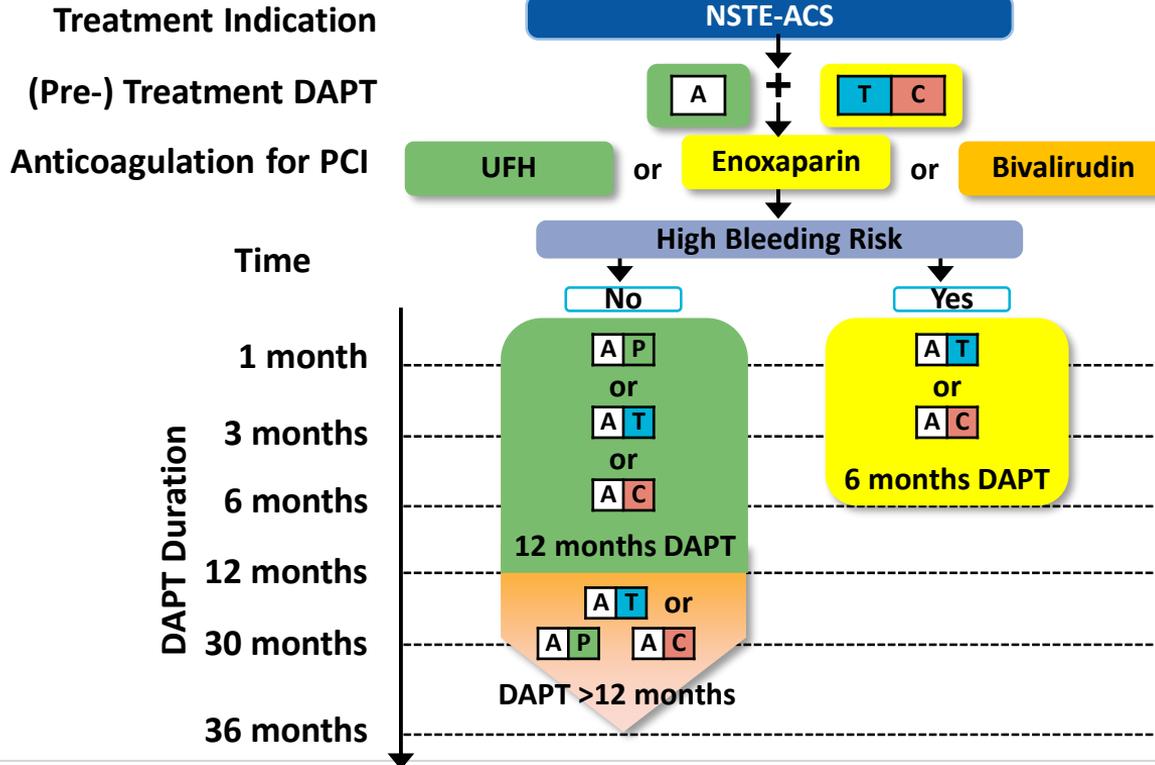
Antithrombotic treatment in patients undergoing PCI

Antithrombotic Treatment in Patients Undergoing Percutaneous Coronary Intervention



Antithrombotic treatment in patients undergoing PCI

Antithrombotic Treatment in Patients Undergoing Percutaneous Coronary Intervention

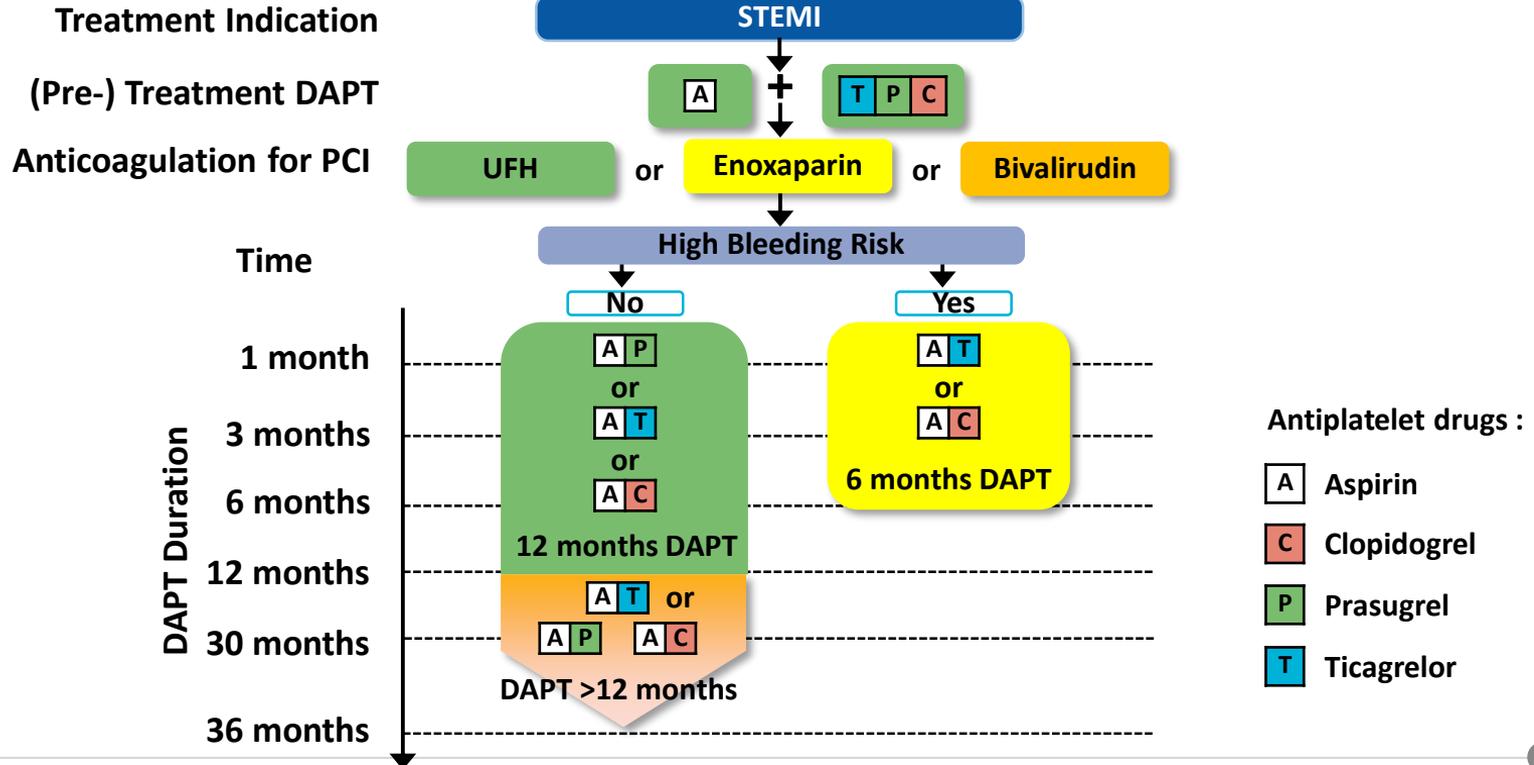


Antiplatelet drugs :

- A Aspirin
- C Clopidogrel
- P Prasugrel
- T Ticagrelor

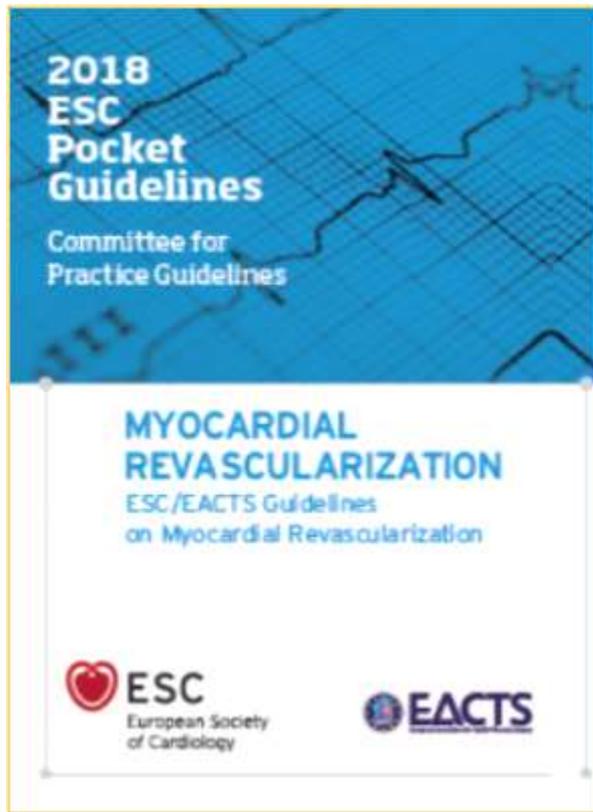
Antithrombotic treatment in patients undergoing PCI

Antithrombotic Treatment in Patients Undergoing Percutaneous Coronary Intervention



Operator/institutional volume in myocardial revascularization

Recommendations	Class	Level
CABG		
It should be considered that CABG be performed at institutions with annual institutional volumes of ≥ 200 CABG cases.	Ia	C
PCI		
It should be considered that PCI for ACS be performed by trained operators with annual volumes of ≥ 75 procedures at institutions performing ≥ 400 PCIs per year with an established 24 h/7 day service for the treatment of patients with ACS.	Ia	C
It should be considered that PCI for SCAD be performed by trained operators with annual volumes of ≥ 75 procedures at institutions performing ≥ 200 PCIs per year.	Ia	C



www.escardio.org/guidelines

**Full Text
ESC Pocket Guidelines App
and much more...**