Update on Dual Antiplatelet Therapy

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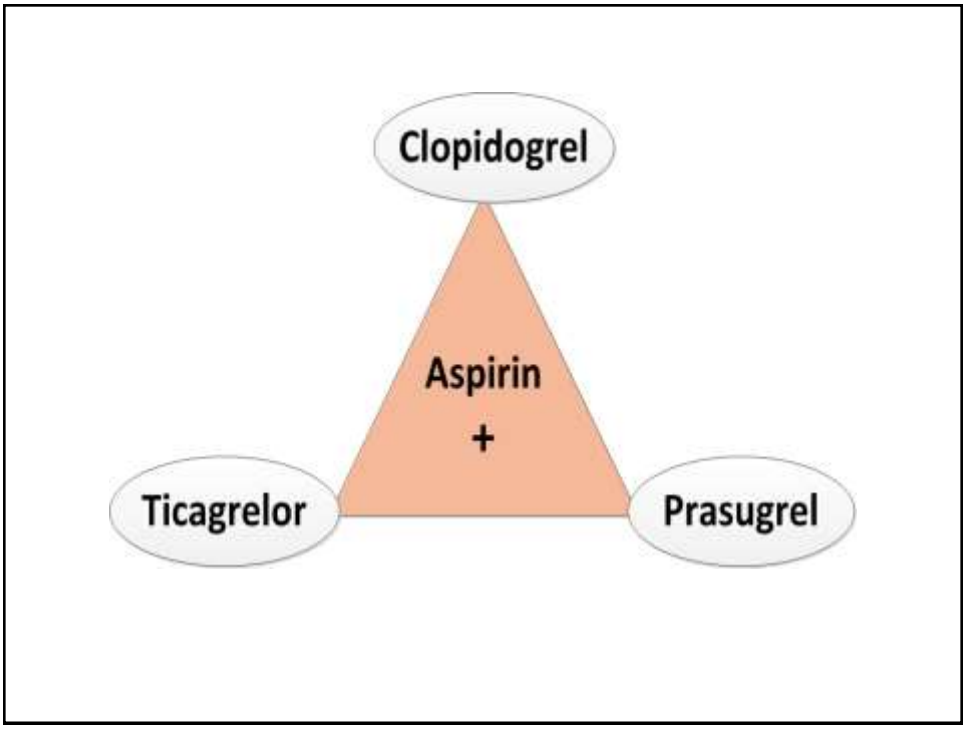
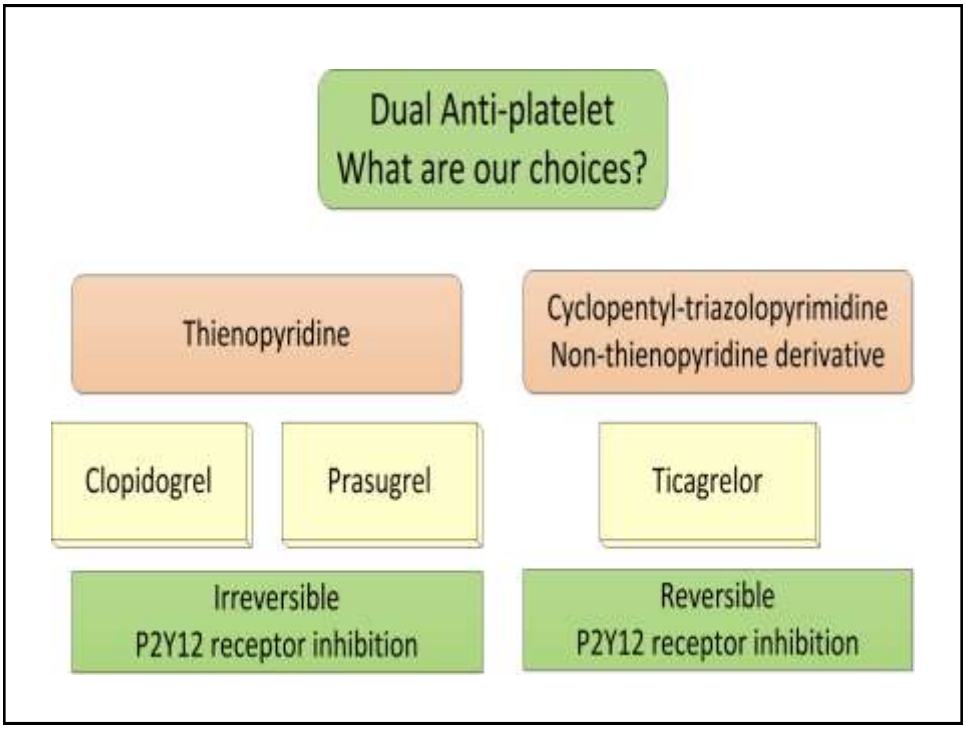
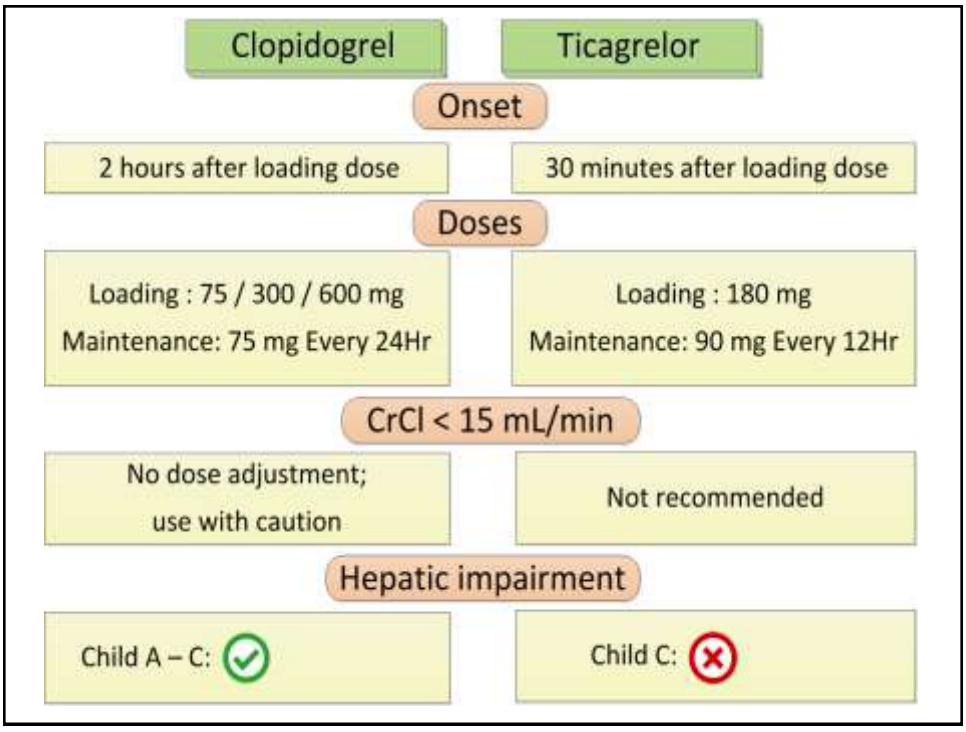
ESC GUIDELINES

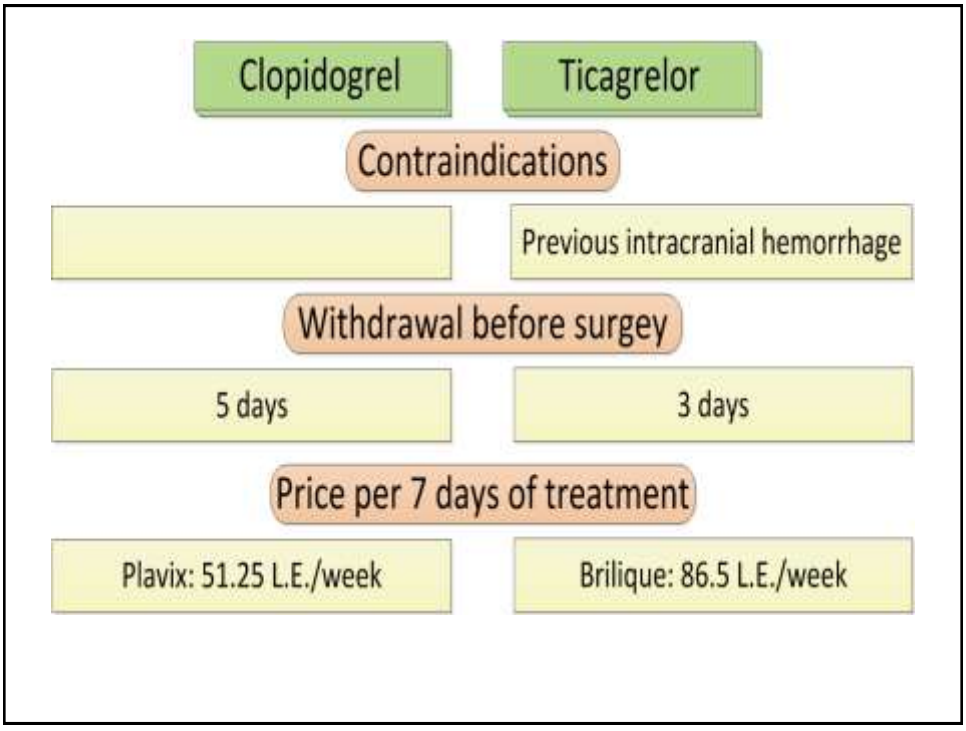
2017 ESC focused update on dual antiplatelet therapy in coronary artery disease developed in collaboration with EACTS

The Task Force for dual antiplatelet therapy in coronary artery disease of the European Society of Cardiology (ESC) and of the European Association for Cardio-Thoracic Surgery (EACTS)


Clopidogrel
Aspirin
+
Ticagrelor
Prasugrel


Dual Anti-platelet
What are our choices?
Thienopyridine
Cyclopentyl-triazolopyrimidine
Non-thienopyridine derivative
Clopidogrel
Prasugrel
Ticagrelor
Irreversible
P2Y12 receptor inhibition
Reversible
P2Y12 receptor inhibition


Clopidogrel
Ticagrelor
Onset
2 hours after loading dose
30 minutes after loading dose
Doses
Loading : 75 / 300 / 600 mg
Maintenance: 75 mg Every 24Hr
Loading : 180 mg
Maintenance: 90 mg Every 12Hr
CrCl < 15 mL/min
No dose adjustment;
use with caution
Not recommended
Hepatic impairment
Child A – C:
Child C:


Clopidogrel
Ticagrelor
Contraindications
Previous intracranial hemorrhage
Withdrawal before surgey
5 days
3 days
Price per 7 days of treatment
Plavix: 51.25 L.E./week
Brilique: 86.5 L.E./week

Switching?
When is it recommended

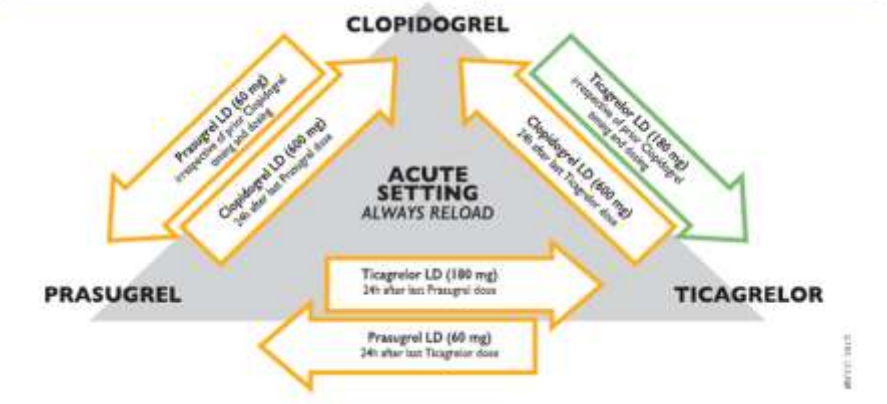
Recommendations	Class	Level
In patients with ACS who were previously exposed to clopidogrel, switching from clopidogrel to ticagrelor is recommended early after hospital admission at a loading dose of 180 mg irrespective of timing and loading dose of clopidogrel, unless contra-indications to ticagrelor exist.	I	B
Additional switching between oral $P2Y_{12}$ inhibitors may be considered in cases of side effects/drug intolerance according to the proposed algorithms.	IIb	C

Clopidogrel | Ticagrelor

How to switch

How to switch in acute setting

LD after 24 hours last Ticagrelor | LD irrespective of prior Cloidogrel

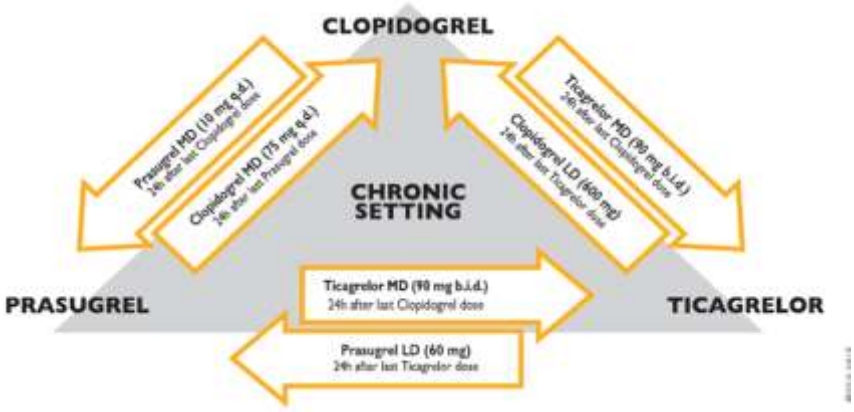


Clopidogrel | Ticagrelor

How to switch

How to switch in chronic setting

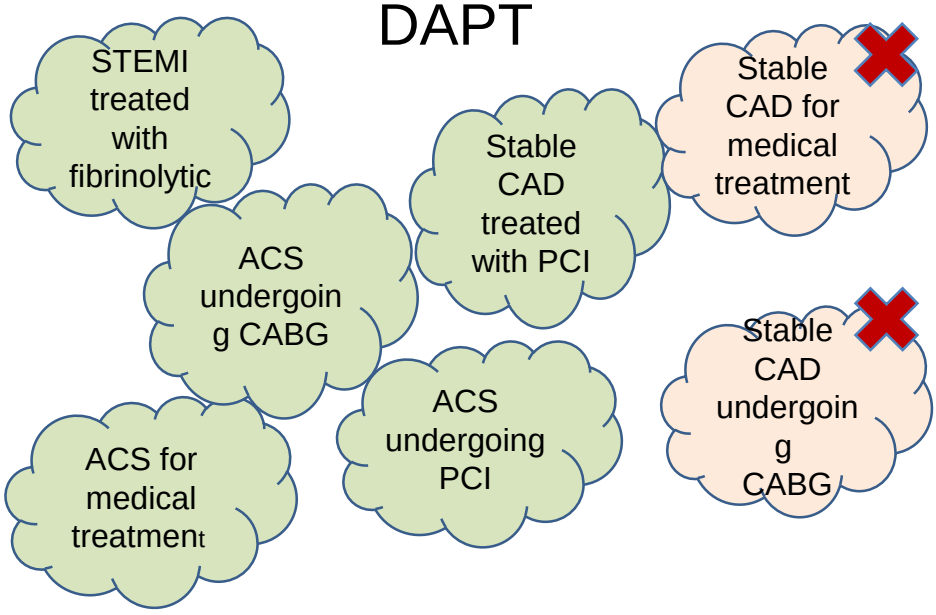
600 mg after 24 hrs (LD) | 90 mg BID after 24 hrs (MD)



Measures to minimize bleeding while on DAPT

Recommendations	Class	Level
In patients treated with DAPT, a daily aspirin dose of 75–100 mg is recommended.	I	A
A PPI in combination with DAPT is recommended.	I	B

What are the indications of DAPT



Bleeding risk scores; What are they good for?

DAPT vs. Precise DAPT

- Tailoring the **duration**
  →↑ ischemic protection / ↓ bleeding risk

Recommendations	Class	Level
The use of risk scores designed to evaluate the benefits and risks of different DAPT durations may be considered.	IIb	A

	PRECISE-DAPT score[a]	DAPT score[a]	
Time of use	At the time of coronary stenting	After 12 months of uneventful DAPT	
DAPT duration strategies assessed	Short DAPT (3–6 months) vs. Standard/long DAPT (12–24 months)	Standard DAPT (12 months) vs. Long DAPT (30 months)	
Score calculation[b]	HB WBC Age CrCl Prior Bleeding Score Points	Age ≥75 65 to <75 <65 Cigarette smoking Diabetes mellitus MI at presentation Prior PCI or prior MI Paclitaxel-eluting stent Stent diameter <3 mm CHF or LVEF <30% Vein graft stent	 –2 pt –1 pt 0 pt +1 pt +1 pt +1 pt +1 pt +1 pt +1 pt +2 pt +2 pt
Score range	0 to 100 points	–2 to 10 points	
Decision making cut-off suggested	Score ≥25 → Short DAPT Score <25 → Standard/long DAPT	Score ≥2 → Long DAPT Score <2 → Standard DAPT	
Calculator	www.precisedaptscore.com	www.daptstudy.org	

Duration of DAPT

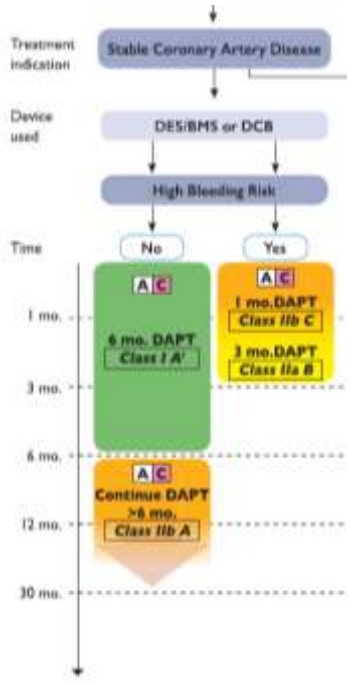
Stable CAD patients treated with PCI

Irrespective of stent type

Clopidogrel

↓

1 – 6 months depending on bleeding risk



Duration of DAPT

ACS patients

Medical therapy

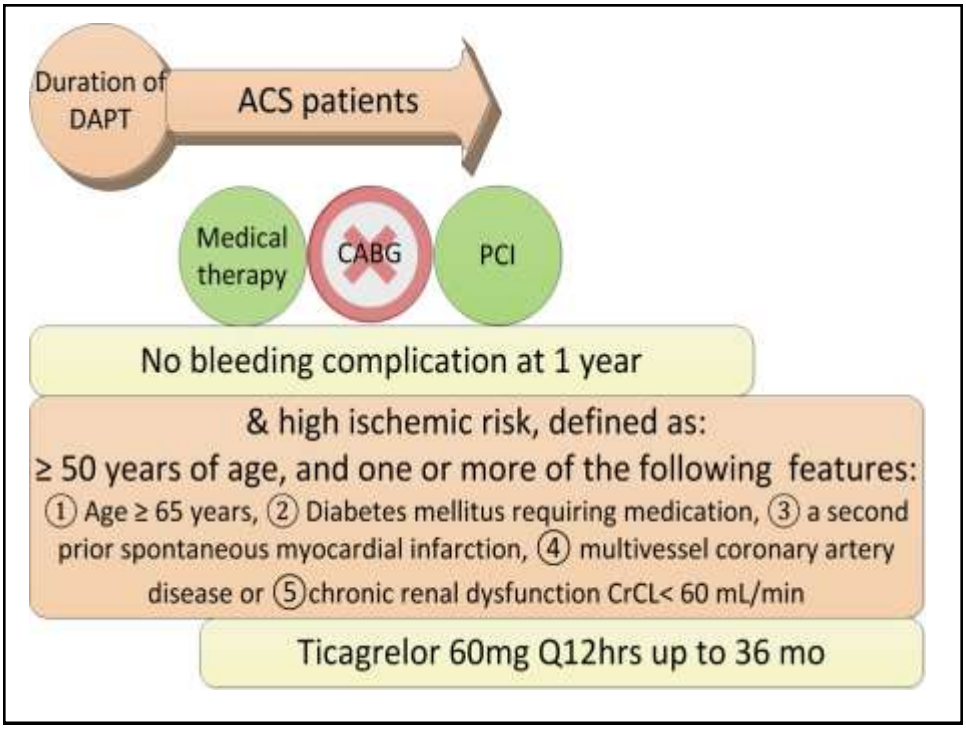
CABG

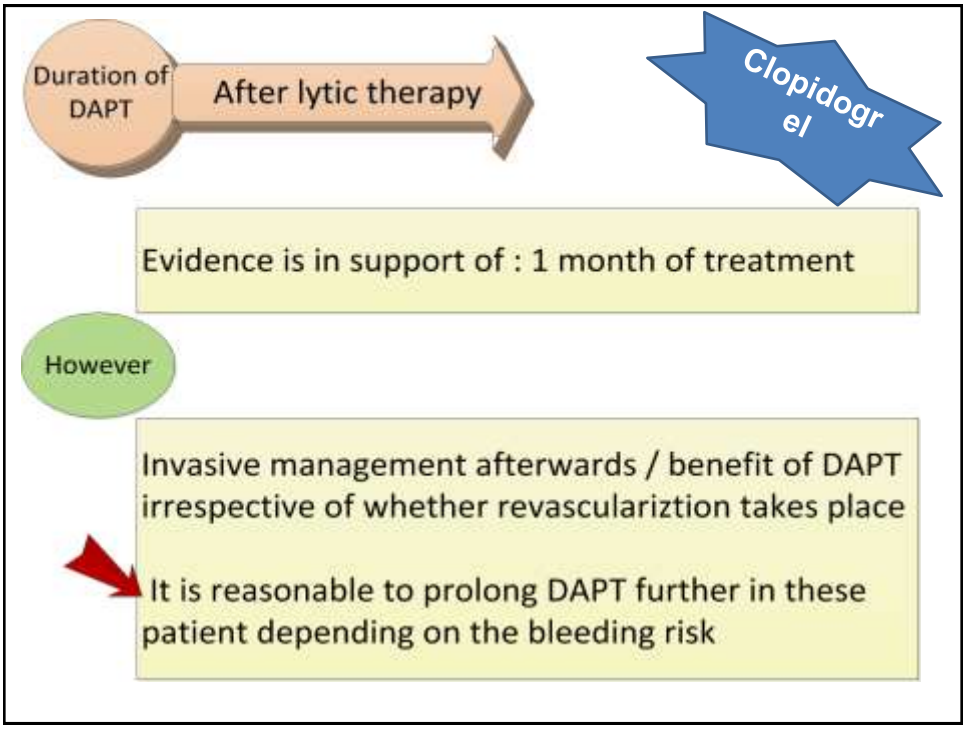
PCI

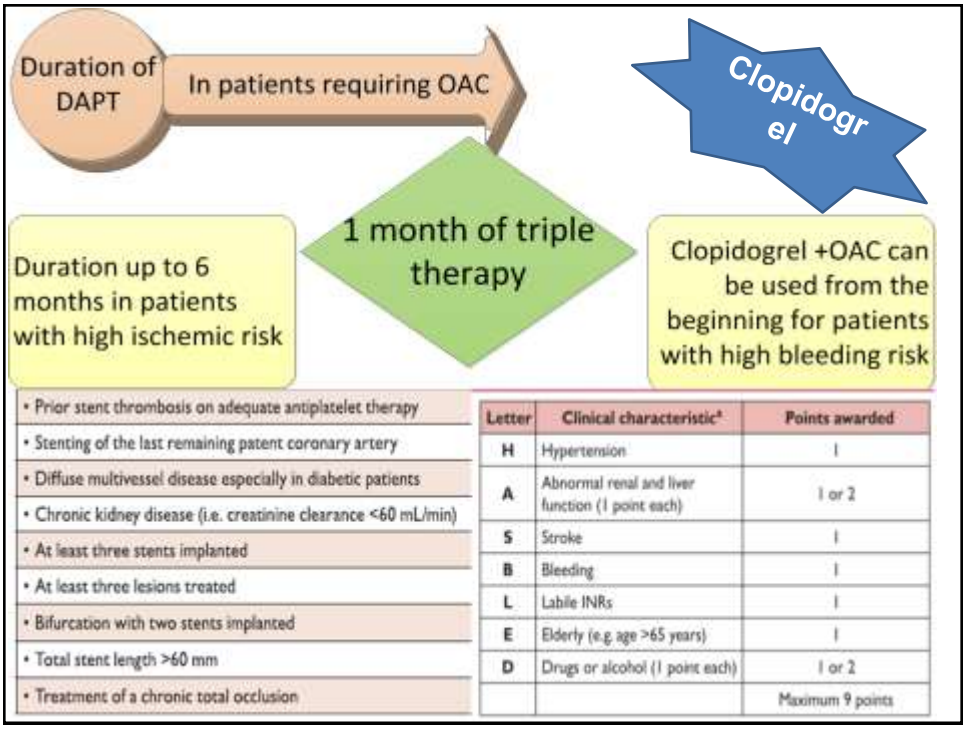
Default length of therapy: 1 year

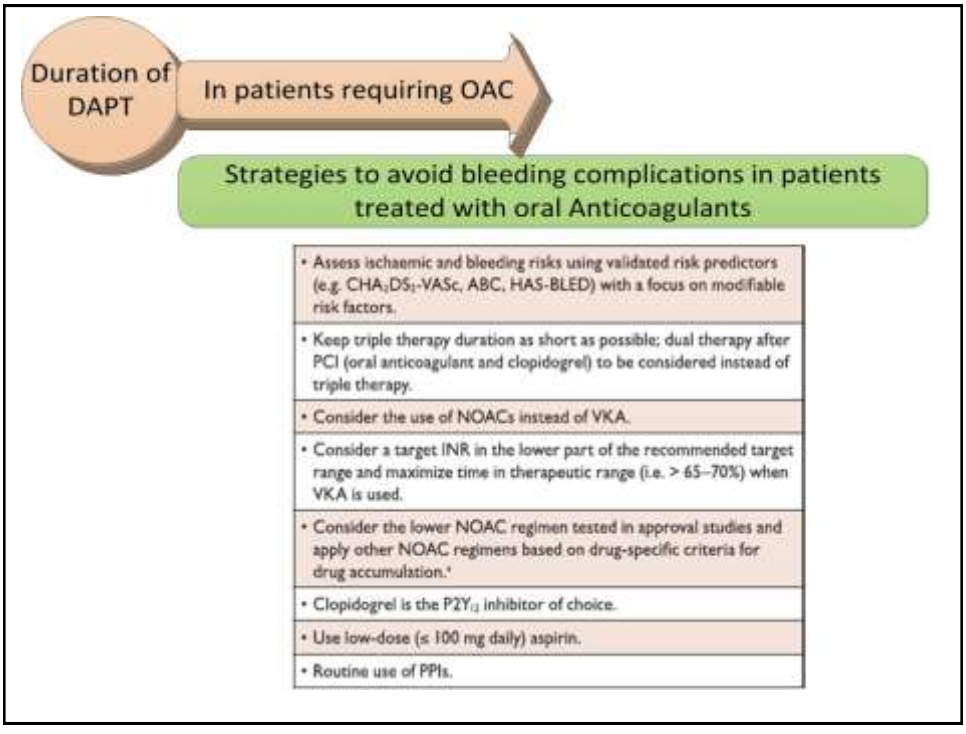
Six – month therapy in high bleeding risk patients

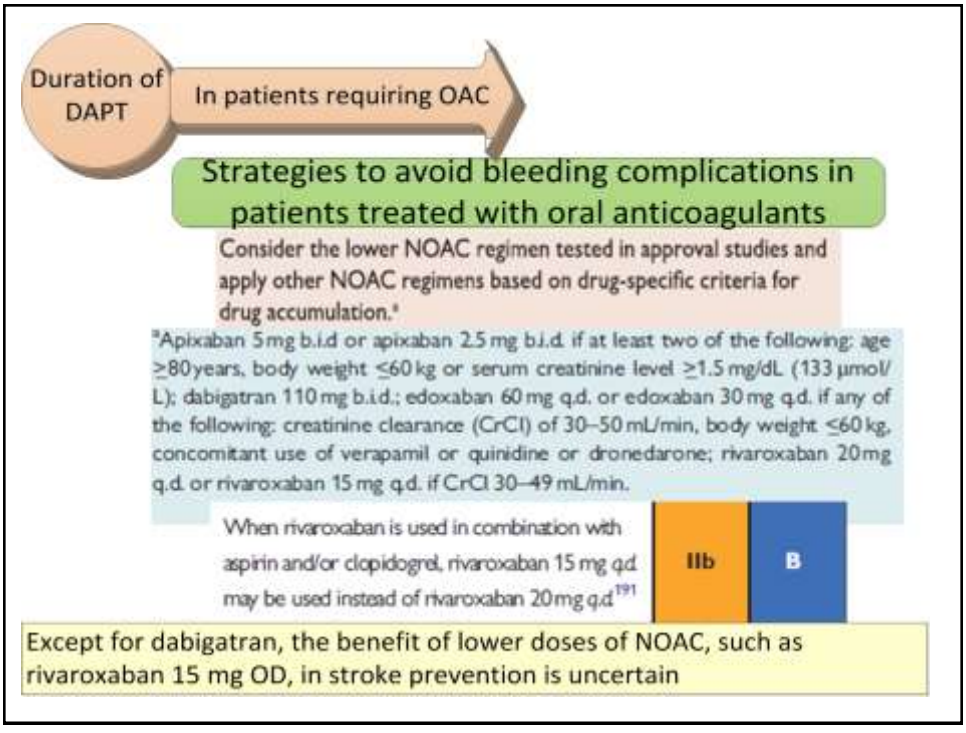
No bleeding complication at 1 year→DAPT>1 yr

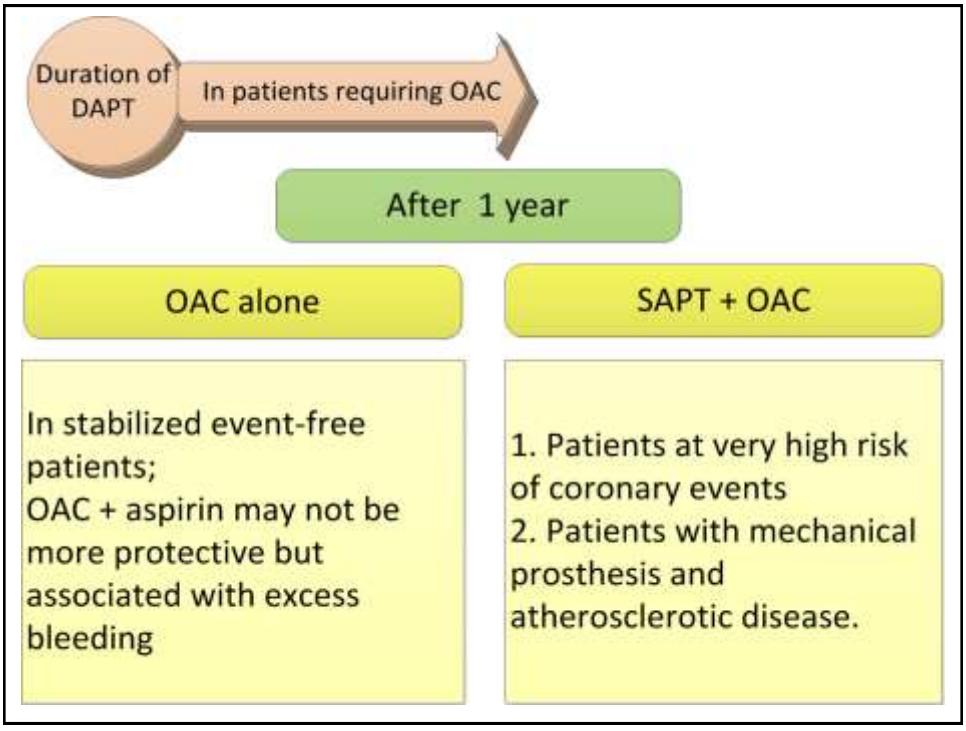

Duration of DAPT
ACS patients
Medical therapy
CABG
PCI
No bleeding complication at 1 year
& high ischemic risk, defined as:
≥ 50 years of age, and one or more of the following features:
① Age ≥ 65 years, ② Diabetes mellitus requiring medication, ③ a second prior spontaneous myocardial infarction, ④ multivessel coronary artery disease or ⑤ chronic renal dysfunction CrCL< 60 mL/min
Ticagrelor 60mg Q12hrs up to 36 mo


Duration of DAPT
After lytic therapy
Clopidogrel
Evidence is in support of : 1 month of treatment
However
Invasive management afterwards / benefit of DAPT irrespective of whether revascularizton takes place
It is reasonable to prolong DAPT further in these patient depending on the bleeding risk


Duration of DAPT
In patients requiring OAC
Clopidogrel
1 month of triple therapy
Duration up to 6 months in patients with high ischemic risk
Clopidogrel +OAC can be used from the beginning for patients with high bleeding risk
• Prior stent thrombosis on adequate antiplatelet therapy
• Stenting of the last remaining patent coronary artery
• Diffuse multivessel disease especially in diabetic patients
• Chronic kidney disease (i.e. creatinine clearance <60 mL/min)
• At least three stents implanted
• At least three lesions treated
• Bifurcation with two stents implanted
• Total stent length >60 mm
• Treatment of a chronic total occlusion
Letter | Clinical characteristic[a] | Points awarded
H | Hypertension | 1
A | Abnormal renal and liver function (1 point each) | 1 or 2
S | Stroke | 1
B | Bleeding | 1
L | Labile INRs | 1
E | Elderly (e.g. age >65 years) | 1
D | Drugs or alcohol (1 point each) | 1 or 2
Maximum 9 points


Duration of DAPT
In patients requiring OAC
Strategies to avoid bleeding complications in patients treated with oral Anticoagulants
• Assess ischaemic and bleeding risks using validated risk predictors (e.g. CHA_2DS_2-VASc, ABC, HAS-BLED) with a focus on modifiable risk factors.
• Keep triple therapy duration as short as possible; dual therapy after PCI (oral anticoagulant and clopidogrel) to be considered instead of triple therapy.
• Consider the use of NOACs instead of VKA.
• Consider a target INR in the lower part of the recommended target range and maximize time in therapeutic range (i.e. > 65–70%) when VKA is used.
• Consider the lower NOAC regimen tested in approval studies and apply other NOAC regimens based on drug-specific criteria for drug accumulation.[a]
• Clopidogrel is the $P2Y_{12}$ inhibitor of choice.
• Use low-dose (≤ 100 mg daily) aspirin.
• Routine use of PPIs.


Duration of DAPT
In patients requiring OAC
Strategies to avoid bleeding complications in patients treated with oral anticoagulants
Consider the lower NOAC regimen tested in approval studies and apply other NOAC regimens based on drug-specific criteria for drug accumulation.[a]
[a]Apixaban 5 mg b.i.d or apixaban 2.5 mg b.i.d. if at least two of the following: age ≥80 years, body weight ≤60 kg or serum creatinine level ≥1.5 mg/dL (133 µmol/L); dabigatran 110 mg b.i.d.; edoxaban 60 mg q.d. or edoxaban 30 mg q.d. if any of the following: creatinine clearance (CrCl) of 30–50 mL/min, body weight ≤60 kg, concomitant use of verapamil or quinidine or dronedarone; rivaroxaban 20 mg q.d. or rivaroxaban 15 mg q.d. if CrCl 30–49 mL/min.
When rivaroxaban is used in combination with aspirin and/or clopidogrel, rivaroxaban 15 mg q.d. may be used instead of rivaroxaban 20 mg q.d.[191]
IIb
B
Except for dabigatran, the benefit of lower doses of NOAC, such as rivaroxaban 15 mg OD, in stroke prevention is uncertain


Duration of DAPT
In patients requiring OAC
After 1 year
OAC alone
SAPT + OAC
In stabilized event-free patients;
OAC + aspirin may not be more protective but associated with excess bleeding
1. Patients at very high risk of coronary events
2. Patients with mechanical prosthesis and atherosclerotic disease.

References

Peter Damman,Pier Woudstra, Wichert J. Kuijt, Robbert J. de Winter, Stefan K. James. P2Y12 platelet inhibition in clinical practice. *J Thromb Thrombolysis* (2012) 33:143–153.

European Society of Cardiology (2017) focused update on dual antiplatelet therapy in coronary artery disease developed in collaboration with EACTS

European Society of Cardiology (2017) Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation

Lexicomp®, Ticagrelor Monograph.

Lexicomp®, Clpidogrel Monograph.

Thank you