

How to use the prescription support tool

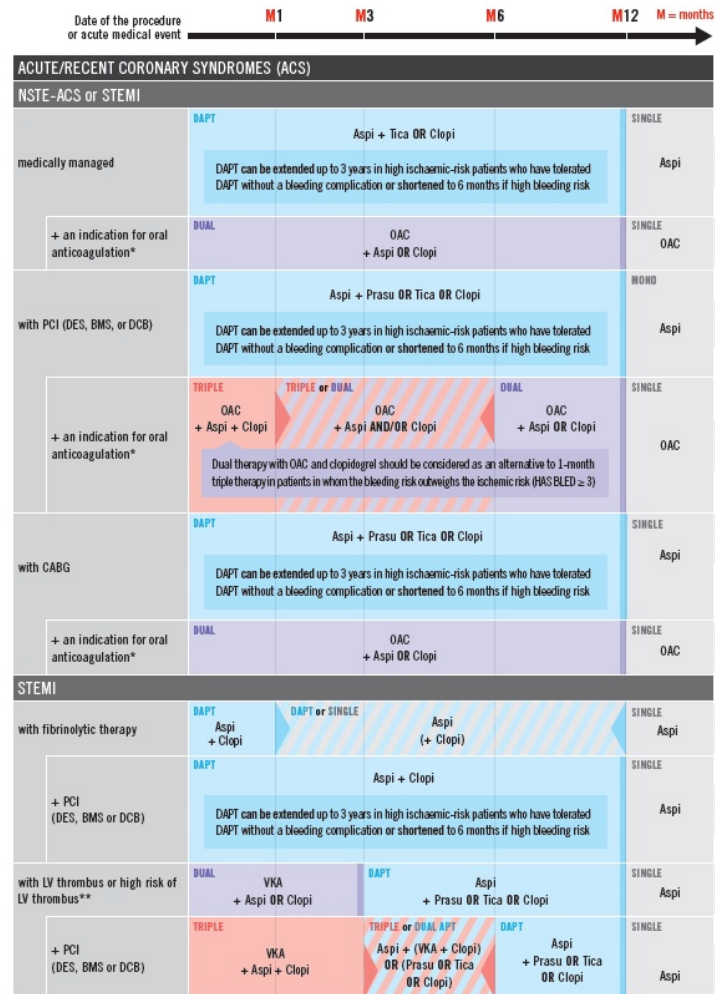
General presentation of the prescription support tool

In practice

Example 1: one cardiovascular
disease

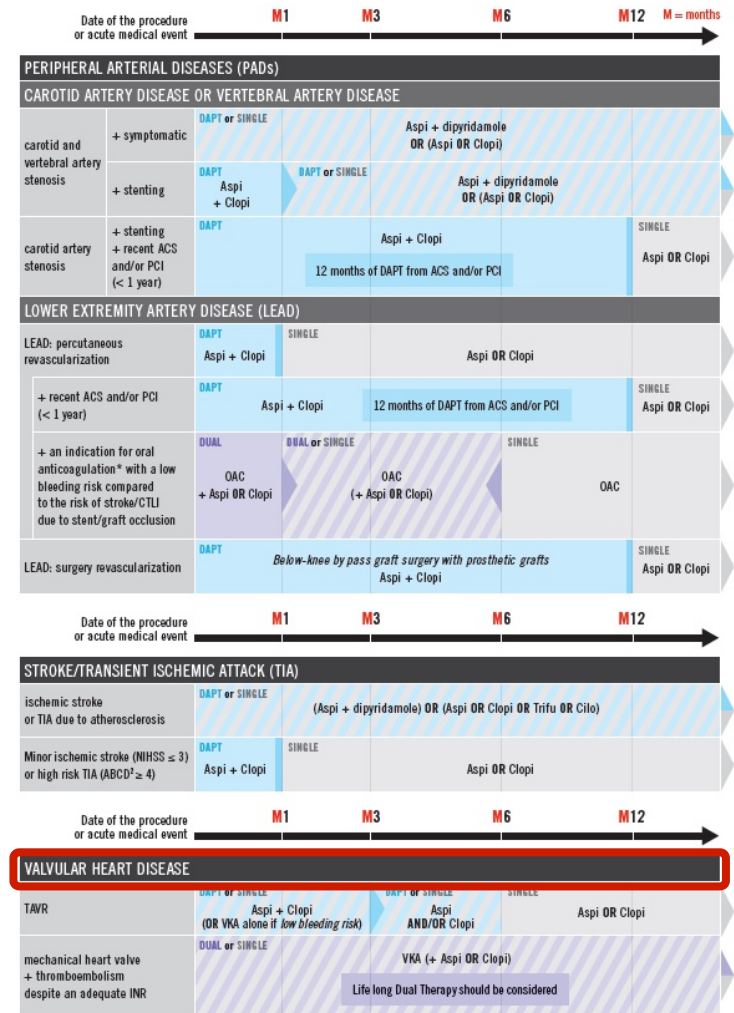
- At your medical consultation, you meet Mr R, 85 years old (weight: 81 kg, body mass index: 24 kg/m²).
- Medical history: arterial hypertension and Parkinson disease
- He had surgery 8 months ago for an aortic stenosis: transcatheter aortic valve replacement (TAVR)
- Which antithrombotic therapy is recommended in this clinical situation?

1- Locate in the chapter headings of the tool, the cardiovascular disease of your patient



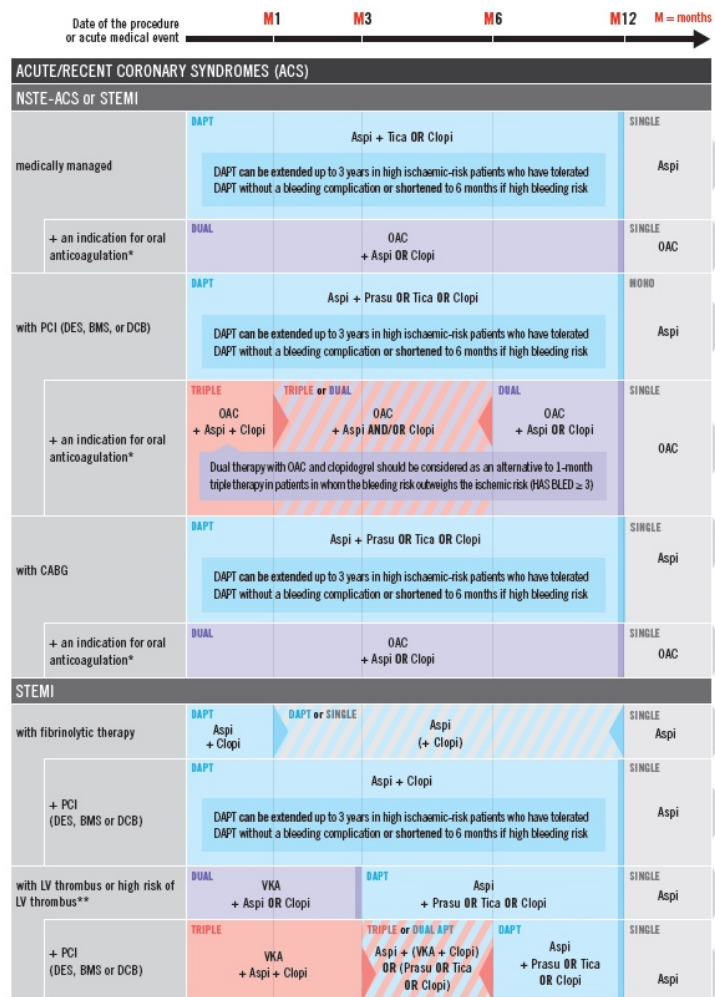
*Indication for OAC: Mechanical heart valve prosthesis, NV-AF or flutter with CHA2DS2-VASc score ≥ 2 for men and ≥ 3 for female. Oral anticoagulation therapy to prevent thromboembolism should be considered in male AF patients with a CHA2DS2-VASc score of 1 and in female AF patients with a CHA2DS2-VASc score of 2. For VTE disease, OAC should be continued for 3 months if there is a triggering factor, 3 to 6 months if it is idiopathic, and for long-term if it is recurrent or associated with a pathology at risk. Once the anticoagulant treatment is complete for VTE disease, the patient will be treated as a patient without indication for oral anticoagulation.

** High risk for LV thrombus: Ejection Fraction < 40%, Anteroseptal wall motion abnormality.



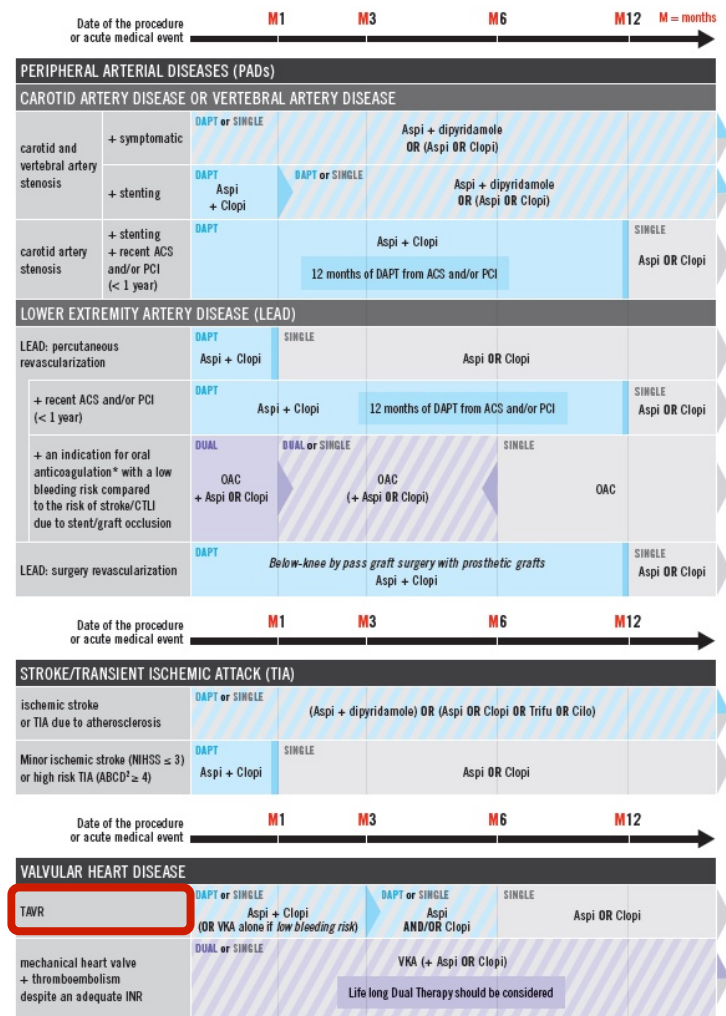
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2- Locate the precise clinical situation of your patient (treatment already performed, associated pathologies etc.)



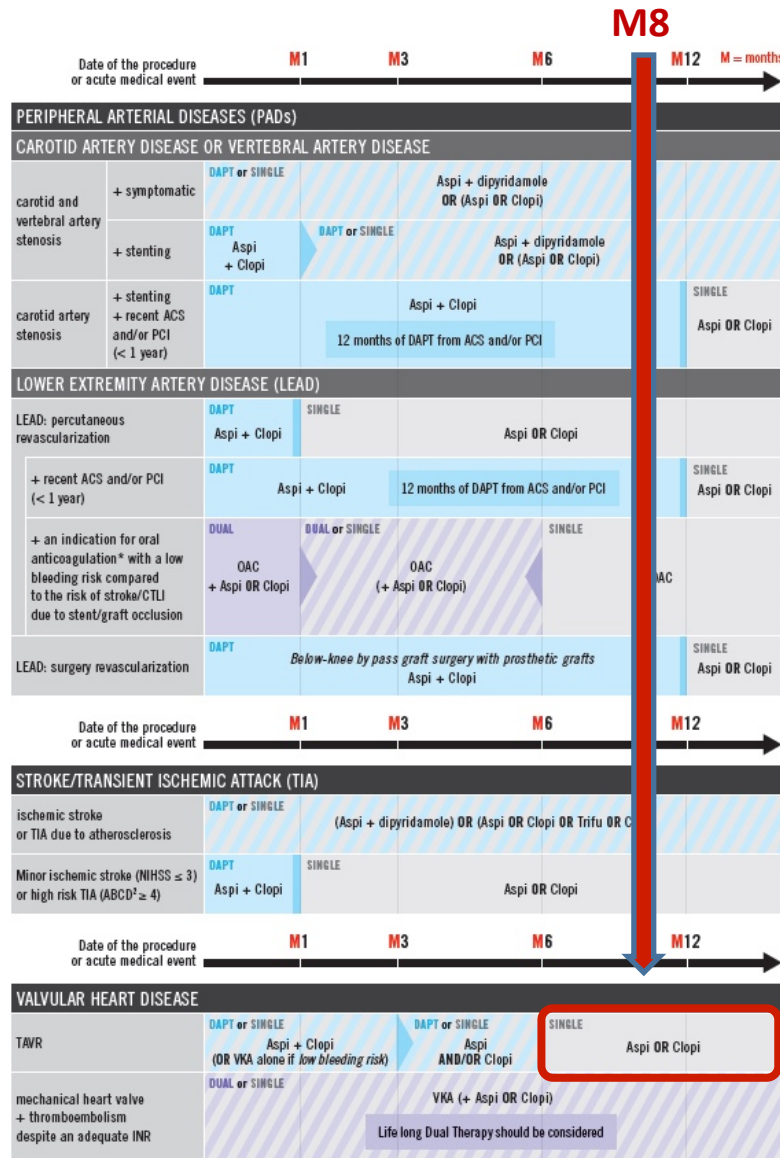
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3- In the recommended treatment, find out where your patient is currently (here: 8 months)



Long-term single antithrombotic therapy is recommended:

- 1) Aspirin
- 2) Clopidogrel

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In practice

Example 2: two cardiovascular
diseases

- At your medical consultation, you meet Mr V, 55 years old (weight: 81 kg, body mass index: 24 kg/m²).
- Medical history: arterial hypertension (controlled), diabetes, renal failure (creatinine clearance with Cockcroft formula: 30 ml/min) and permanent non-valvular atrial fibrillation
- He had an acute coronary syndrome 5 months ago with a percutaneous coronary intervention (PCI)
- Which antithrombotic therapy is recommended in this clinical situation?

Date of the procedure or acute medical event → **M1** **M3** **M6** **M12** **M= months**

ACUTE/RECENT CORONARY SYNDROMES (ACS)					
NSTE-ACS or STEMI					
medically managed	DAPT	Aspi + Tica OR Clopi			SINGLE
		DAPT can be extended up to 3 years in high ischaemic-risk patients who have tolerated DAPT without a bleeding complication or shortened to 6 months if high bleeding risk			Aspi
+ an indication for oral anticoagulation*	DUAL	OAC + Aspi OR Clopi			SINGLE OAC
with PCI (DES, BMS, or DCB)	DAPT	Aspi + Prasu OR Tica OR Clopi			MONO
		DAPT can be extended up to 3 years in high ischaemic-risk patients who have tolerated DAPT without a bleeding complication or shortened to 6 months if high bleeding risk			Aspi
+ an indication for oral anticoagulation*	TRIPLE	TRIPLE or DUAL	DUAL	SINGLE	
	OAC + Aspi + Clopi	OAC + Aspi AND/OR Clopi	OAC + Aspi OR Clopi	OAC	
Dual therapy with OAC and clopidogrel should be considered as an alternative to 1-month triple therapy in patients in whom the bleeding risk outweighs the ischemic risk (HAS BLED ≥ 3)					
with CABG	DAPT	Aspi + Prasu OR Tica OR Clopi			SINGLE
		DAPT can be extended up to 3 years in high ischaemic-risk patients who have tolerated DAPT without a bleeding complication or shortened to 6 months if high bleeding risk			Aspi
+ an indication for oral anticoagulation*	DUAL	OAC + Aspi OR Clopi			SINGLE OAC
STEMI					
with fibrinolytic therapy	DAPT	Aspi (+ Clopi)			SINGLE
	Aspi + Clopi	DAPT or SINGLE			Aspi
+ PCI (DES, BMS or DCB)	DAPT	Aspi + Clopi			SINGLE
	DAPT can be extended up to 3 years in high ischaemic-risk patients who have tolerated DAPT without a bleeding complication or shortened to 6 months if high bleeding risk			Aspi	
with LV thrombus or high risk of LV thrombus**	DUAL	VKA + Aspi OR Clopi	DAPT		SINGLE
			Aspi + Prasu OR Tica OR Clopi		Aspi
+ PCI (DES, BMS or DCB)	TRIPLE	VKA + Aspi + Clopi	TRIPLE or DUAL APT	DAPT	SINGLE
			Aspi + (VKA + Clopi) OR (Prasu OR Tica OR Clopi)	Aspi + Prasu OR Tica OR Clopi	Aspi

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		DAPT can be extended up to 3 years in high ischaemic-risk patients who have tolerated DAPT without a bleeding complication or shortened to 6 months if high bleeding risk				
	+ an indication for oral anticoagulation*	TRIPLE OAC + Aspi + Clopi	TRIPLE or DUAL OAC + Aspi AND/OR Clopi	DUAL OAC + Aspi OR Clopi	SINGLE OAC	
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STEMI						
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	+ PCI (DES, BMS or DCB)	TRIPLE VKA + Aspi + Clopi	TRIPLE or DUAL APT Aspi + (VKA + Clopi) OR (Prasu OR Tica OR Clopi)	DAPT	Aspi + Prasu OR Tica OR Clopi	SINGLE Aspi

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ABBREVIATIONS

CHA2DS2-VASc C Congestive Heart failure (+1)
 H Hypertension (+1) A2 Age ≥ 75 (+2)
 D Diabetes Mellitus (+1) S2 Prior stroke or TIA thromboembolism (+2)
 V Vascular disease (+1) A Age 65-74 (+1)
 Sc Sex category (i.e.: female sex) (+1)

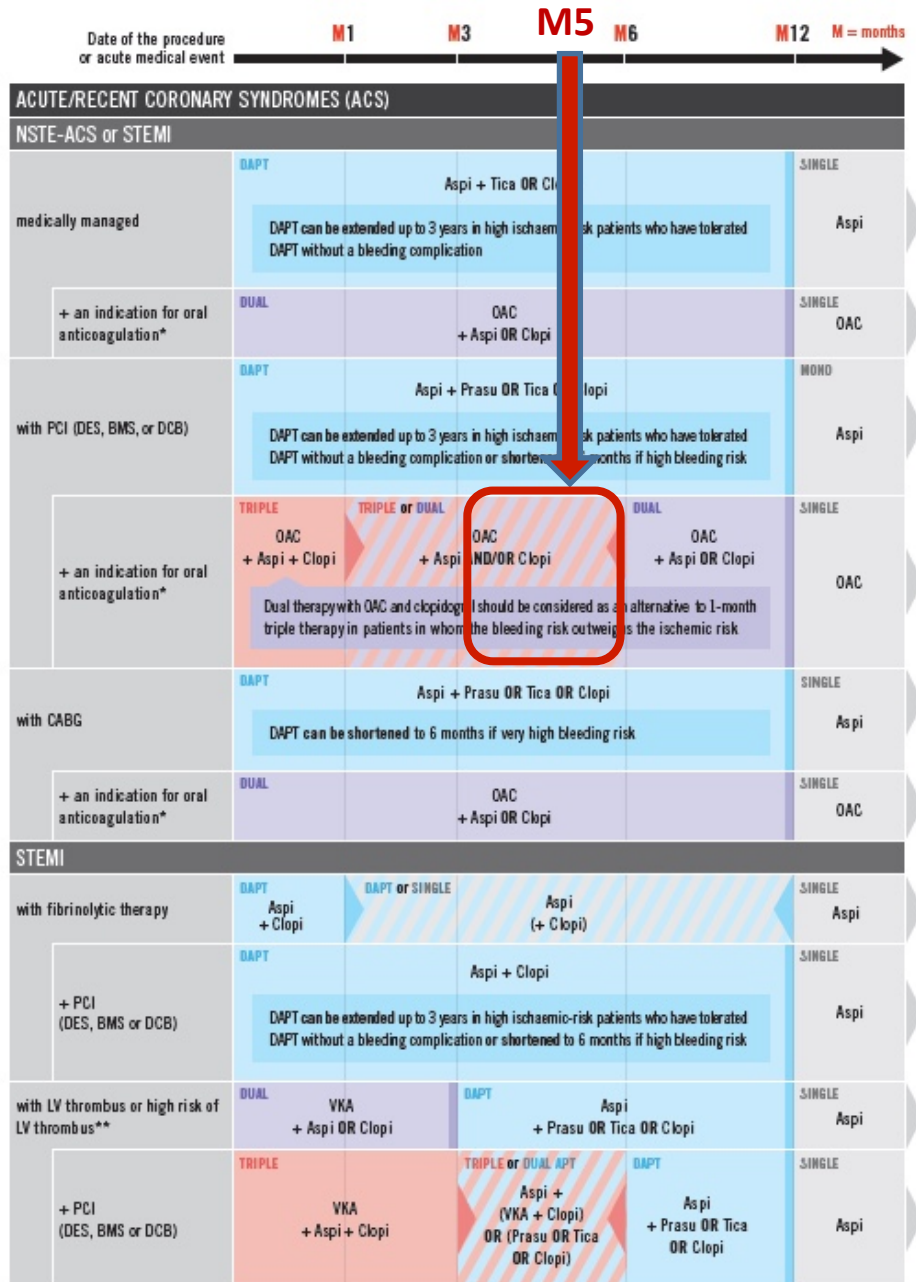
Hypertension and diabetes = 2 points
→ Indication for oral anticoagulation

HAS BLED Abnormal renal / liver function (+1 or +2)
 Hypertension (+1) Stroke history (+1)
 Prior major Bleeding or predisposition to bleeding (+1)
 Labile INR (+1) Elderly > 65 (+1)
 Drugs (concomitant aspirin, clopidogrel, NSAIDs) or alcohol (+1 or +2)

Abnormal renal function = 1 point
Drugs = 1 point
HAS BLED = 2

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3- In the recommended treatment, find out where your patient is currently (here: 5 months)



Here, two options are possible according to the ischemic and bleeding risk of your patient:

- 1) Dual therapy: OAC + Aspirin OR Clopidogrel up to 12 months (so for another 7 months)
- 2) Triple therapy: OAC + Aspirin + Clopidogrel up to 6 months (so for another 1 month) and then a dual therapy with OAC + Aspirin OR Clopidogrel up to 12 months (so for another 6 months)

a pathology at risk. Once the anticoagulant treatment is complete for VTE disease, the patient will be treated as a patient without indication for oral anticoagulation.

** High risk for LV thrombus: Ejection Fraction < 40%, Anterolateral wall motion abnormality.

4- Check the recommended dosage for the drugs you want to prescribe

CLINICAL SITUATIONS NOT FOUND IN THIS TOOL NEED A SPECIALIST'S OPINION

SINGLE	Single Therapy: Antiplatelet (SAPT) or Anticoagulation (SACT)
DUAL APT	Dual Antiplatelet Therapy (DAPT)
DUAL	Dual Therapy (SAPT + SACT)
TRIPLE	Triple Therapy (DAPT + SACT)



Abbreviations

ABC² score for TIA	Age ≥ 60 years (+1)
	Clinical features of the TIA (unilateral weakness (+2), speech disturbance without weakness (+1), other symptoms (0))
	Duration of symptoms (< 10 min (0), 10-59 min (+1), ≥ 60 min (+2))
	BP ≥ 140/90 mmHg (+1) Diabetes (+1)
ACS	Acute Coronary Syndrome
Aspi	Aspirin
BMS	Bare-Metal Stent
CABG	Coronary Artery By Pass Graft
CHA2DS2-VASc	C Congestive Heart failure (+1)
	H Hypertension (+1) A2 Age ≥ 75 (+2)
	D Diabetes Mellitus (+1) S2 Prior stroke or TIA/thromboembolism (+1)
	V Vascular disease (+1) A Age 65-74 (+1)
	Sex Sex category (i.e.: female sex) (+1)
Cilo	Cilostazol
Clopi	Clopidogrel
CTLI	Chronic Limb-Threatening Ischemia
DAPT	Dual Antiplatelet Therapy
DCB	Drug-Coated Balloon
DES	Drug-Eluting Stent
DOA	Direct Oral Anticoagulant
DUAL	Dual Therapy: SAPT + SACT
HAS BLED	Abnormal renal / liver function (+1 or +2)
	Hypertension (+1) Stroke history (+1)
	Prior major Bleeding or predisposition to bleeding (+1)
	Labile INR (+1) Elderly > 65 (+1)
	Drugs (concomitant aspirin, clopidogrel, NSAIDs) or alcohol (+1 or +2)
INR	International Normalized Ratio
LEAD	Lower Extremity Artery Disease
LV	Left Ventricular
NIBSS	National Institutes of Health Stroke Scale
NSTE-ACS	Non-ST Elevation Acute Coronary Syndrome
NV-AF	Non-valvular atrial fibrillation
OAC	Oral Anticoagulant: VKA or DOA
PCI	Percutaneous coronary intervention (= DES, BMS or DCB)
Prasug	Prasugrel
SAPT	Single Antiplatelet Therapy
SACT	Single Anticoagulation Therapy
SCAD	Stable coronary artery disease
STEMI	ST-Elevation Myocardial Infarction
TAVR	Transcatheter Aortic Valve Replacement
TIA	Transient Ischemic Attack
Tica	Ticagrelor
Triflu	Triflusal
TRIPLE	Triple Therapy: DAPT + SACT
VKA	Vitamin K Antagonist Transcatheter Aortic Valve
VTE	Venous Thromboembolism

Dosage of antithrombotic drugs

Aspirin: 75-100 mg/day
 Aspirin/dipyridamole: 25/200 mg twice a day
 Cilostazol: 100 mg twice a day
 Clopidogrel: 75 mg/day
 Prasugrel: 10 mg/day (5 mg/day in patients with body weight < 60 kg)
 Contraindications for prasugrel: previous intracranial haemorrhage, previous ischaemic stroke or transient ischaemic attack, or ongoing bleeds; prasugrel is not recommended for patients >75 years of age or with a body weight <60 kg.
 Ticagrelor: 90 mg twice a day
 Contraindications for ticagrelor: previous intracranial haemorrhage or ongoing bleeds.
 Triflusal: 600 mg/day
 VKA: target INR 2-3 for NV-AF, VTE, LV thrombus
 Rivaroxaban (Xarelto):
 • Venous thrombo-embolism (venous thrombosis/pulmonary embolism): D1 to D21: 15 mg x 2/day then from D22 onwards: 20 mg/day in a single take
 • For the prevention of embolic stroke in patients with NV-AF: 20 mg/day in a single take
 • No adjustment on weight, age, sex
 • Renal failure
 - Contraindication with creatinine clearance < 15 ml/min
 - With creatinine clearance between 15-49 ml/min:
 § NV-AF: 15 mg/day
 § Venous thrombo-embolism: 15 mg x 2/day during the first three weeks then 20 mg/day in a single take
 - No adjustment beyond a creatinine clearance > 50 ml/min
 Apixaban (Eliquis):
 • For the prevention of embolic stroke in patients with NV-AF:
 - 5 mg x 2/day
 - NV-AF and at least two of the following: age ≥ 80 yo, weight ≤ 60 kg, serum creatinine ≥ 133 micromol/L; 2.5 mg x 2/day
 - With creatinine clearance between 15-29 ml/min: 2.5 mg x 2/day
 - Contraindication with creatinine clearance < 15 ml/min
 • Venous thrombo-embolism (venous thrombosis/pulmonary embolism): D1 to D7: 10 mg x 2/day then from D8 onwards: 5 mg x 2/day
 Dabigatran (Pradaxa):
 • For the prevention of embolic stroke in patients with NV-AF or VTE treatment, after treatment with a parenteral anticoagulant for at least 5 days: 150 mg x 2/day
 • 110 mg x 2/day if:
 § > 80 yo
 § Patients also treated with Verapamil
 § clearance between 30-50 ml/min
 Contraindication with creatinine clearance < 30 ml/min

THE COCKCROFT AND GAULT FORMULA (1973)

$$C_{Cr} = \left(\frac{(140 - \text{Age}) \times \text{Weight}}{72 \times S_{Cr}} \right) \times 0.85 \text{ (if female)}$$

C_{Cr} (creatinine clearance) = mL/minute
 Age = years Weight = kg S_{Cr} (serum creatinine) = mg/dL

IF BLEEDING DURING DAPT, follow these recommendations (figure 10):
<https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines/2017-focused-update-on-dual-antiplatelet-therapy-dapt>

SPECIFIC CONDITIONS REQUIRING SYSTEMATICALLY AN IN-HOSPITAL SPECIALIST HAVE BEEN EXCLUDED: cancer, auto-immune disease, hemophilia, human immunodeficiency virus (HIV), pediatrics and pregnancy and In-hospital prescriptions (including bridging therapy, perioperative therapy, and treatment of acute phase of cardiovascular event)

OAC:

- VKA with a target INR: 2-3
- Rivaroxaban 15 mg/day
- Apixaban 5 mg X 2/day
- Dabigatran is contraindicated

Antiplatelets:

- Aspirin 75-100 mg/day
- Clopidogrel 75 mg/day

TARGET INR FOR MECHANICAL PROSTHESES		Patient-related risk factor ^a	
Prosthesis thrombogenicity	None	≥1	
Low ^b	2.5	3.0	
Medium ^c	3.0	3.5	
High ^d	3.5	4.0	

INR = international normalized ratio; LVEF = left ventricular ejection fraction
^a Mitral or tricuspid valve replacement, previous thromboembolism; atrial fibrillation, mitral stenosis of any degree, LVEF < 35%
^b Carbomedics, Medtronic Hall, ATS, Medtronic Open-Pivot, St-Jude Medical, On-X, Sorin Bicarbon
^c Other bileaflet valve with insufficient data
^d Lillehei-Kaster, Omniscience, Starr-Edwards (ball-cage), Bjork Shiley and other tilting-disc valves