Universitätsspital Basel

Kardiologie

MTE 2016, Lugano

How to deal with ACS and Atrial Fibrillation?

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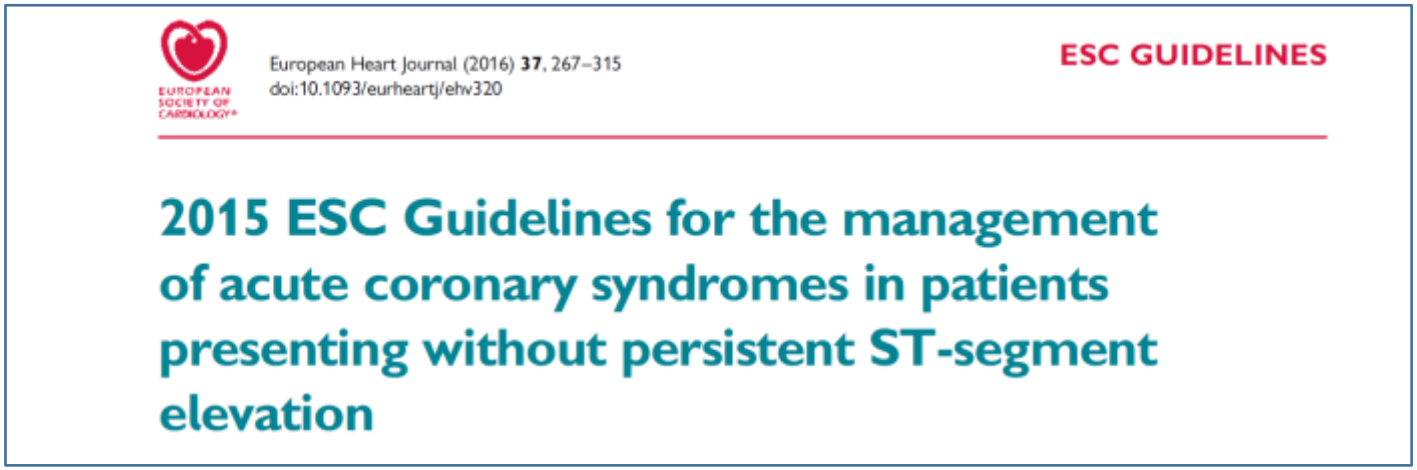
Important Issues

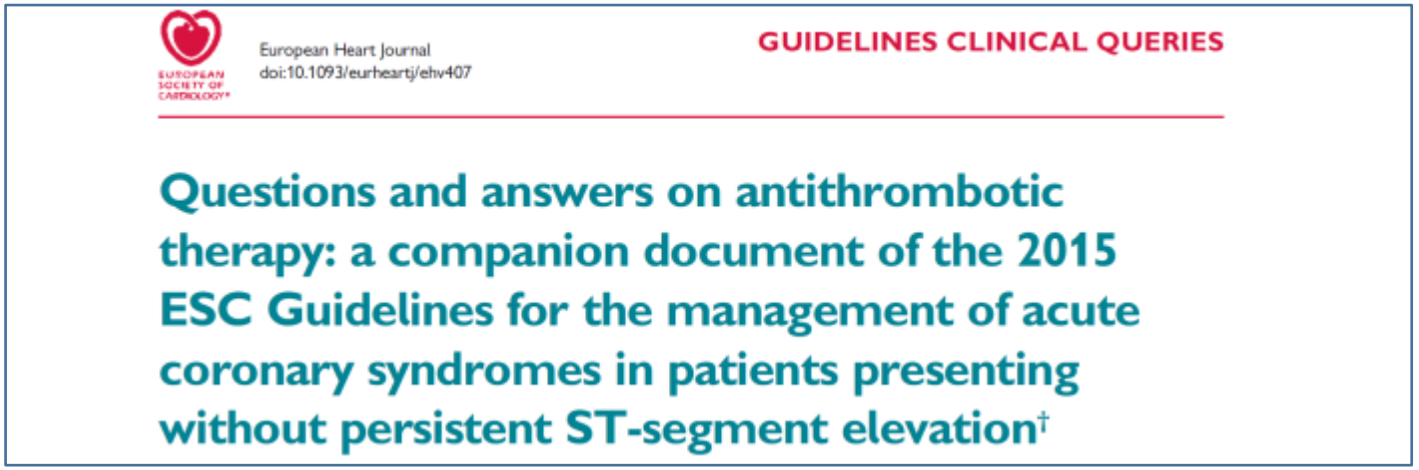
- **Periprocedural**
  - **Timing of intervention**
  - **Pre-treatment**
  - **Concomitant antiocoagulation therapy**
  - **Use of GPIIb/IIIa-Antagonists**
  - **Choice of arterial access**
  - **Choice of stent**

- **Long-term antiplatelet therapy**
  - **Dual therapy versus triple therapy**
  - **Clopidogrel versus Ticagrelor versus Prasugrel**
  - **1 month versus 3 months versus 6 months versus 12 months**
  - **VKA versus NOAC**

Level C

Recommended Literature





Roffi M, et al. Eur Heart J. 2016;37:267-315
Collet JP, et al. Eur Heart J 2015

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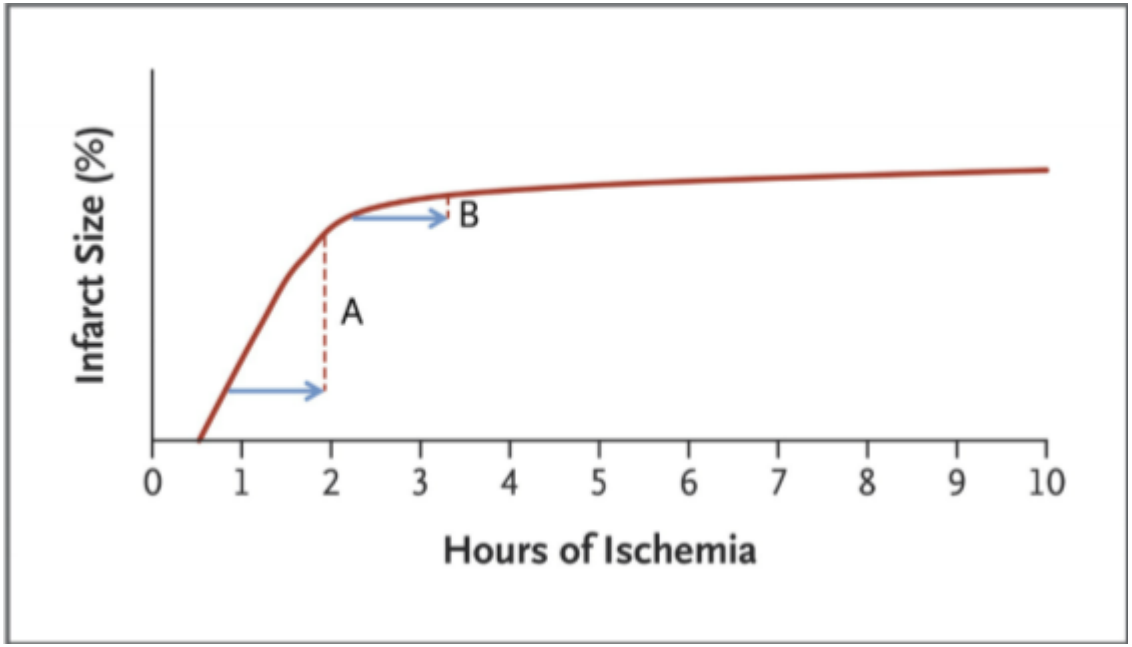
Procedural Aspsects

Table 12 Suggested strategies to reduce bleeding risk related to PCI

- Radial approach preferred.
- In patients on OAC
  - PCI performed without interruption of VKAs or NOACs.
  - In patients on VKAs, do not administer UFH if INR value >2.5.
  - In patients on NOACs, regardless of the timing of the last administration of NOACs, add additional low-dose parenteral anticoagulation (e.g. enoxaparin 0.5 mg/kg i.v. or UFH 60 IU/kg).
  - Aspirin indicated but avoid pretreatment with $P2Y_{12}$ inhibitors.
  - GPIIb/IIIa inhibitors only for bailout of periprocedural complications.

Roffi M, et al. Eur Heart J. 2016;37:267-315

Timing of Intervention



Recommendations	Class[a]	Level[b]	Ref.[c]
An early invasive coronary angiography (within 24 h) should be considered in moderate- to high-risk patients,[d] irrespective of OAC exposure, to expedite treatment allocation (medical vs. PCI vs. CABG) and to determine the optimal antithrombotic regimen.	IIa	C	

- In patients on OAC
  - PCI performed without interruption of VKAs or NOACs.

N Engl J Med 2014; 370:178-182

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Procedural Aspsects

Initial dual antiplatelet therapy with aspirin plus a $P2Y_{12}$ inhibitor in addition to OAC before coronary angiography is not recommended.	III	C

Roffi M, et al. Eur Heart J. 2016;37:267-315

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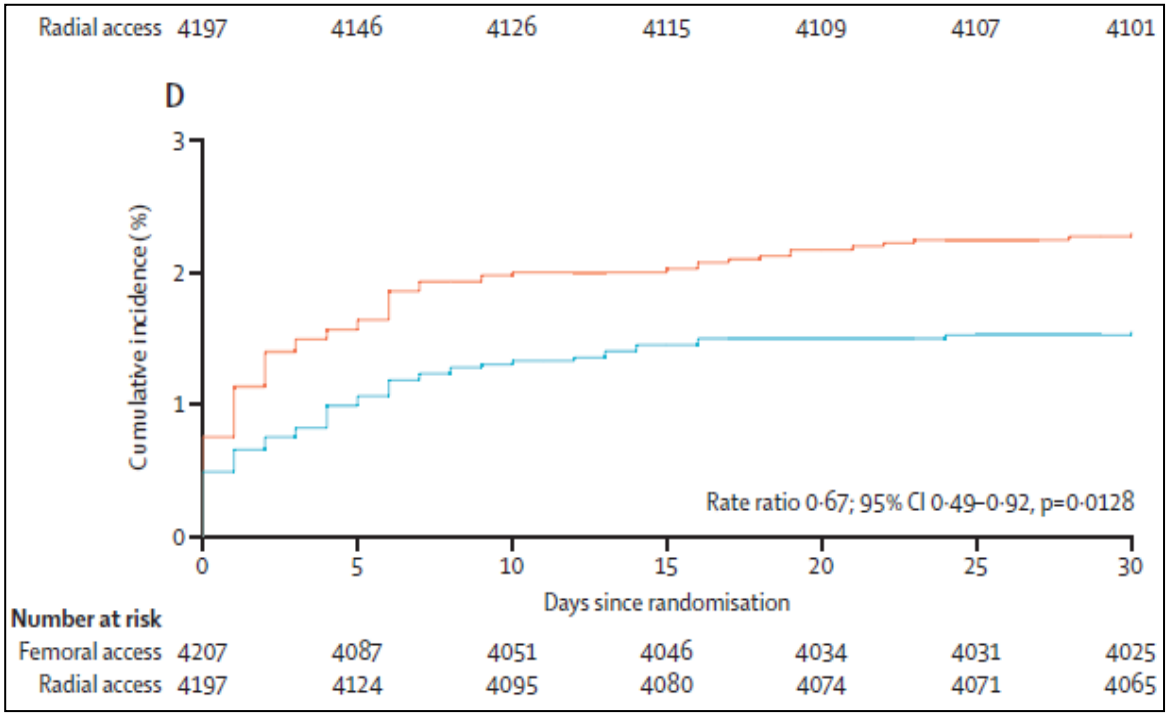
Femoral versus Radial Approach

MATRIX



Bleeding ARC 3 or 5

Radial over femoral access is recommended for coronary angiography and PCI.	I	A	251

Valgimigli M, et al. Lancet 2015;385:2465-76

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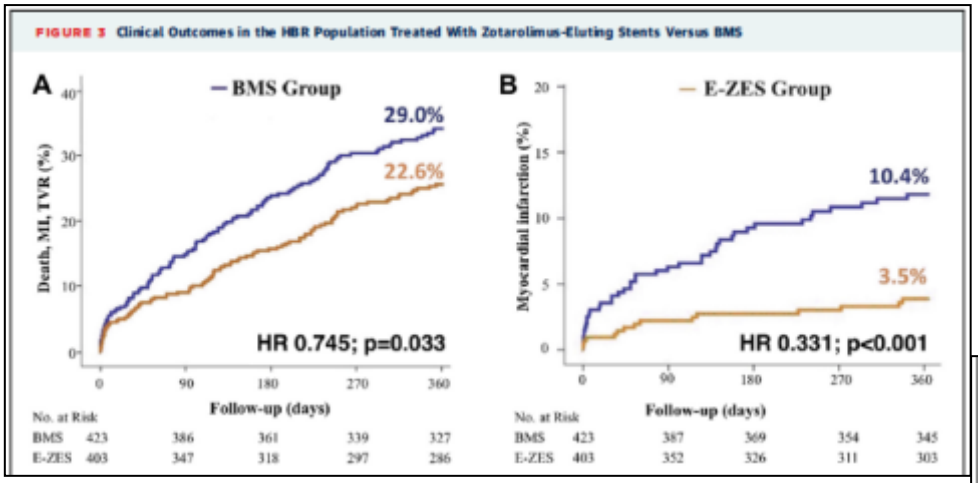
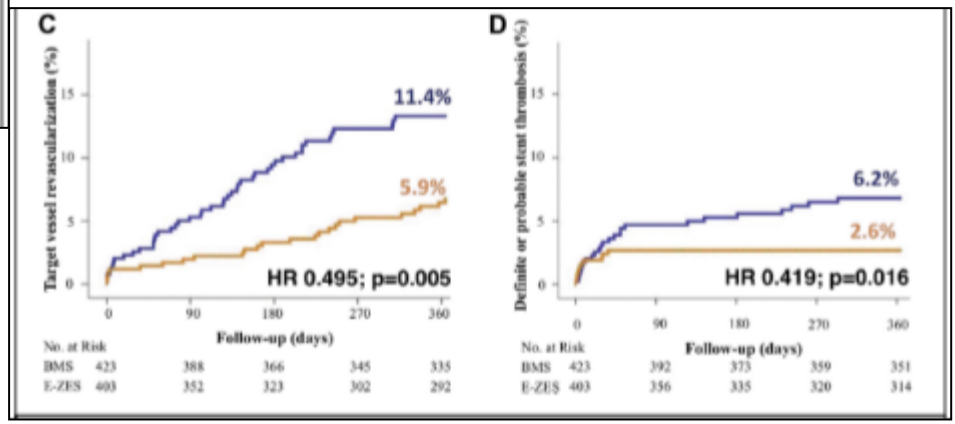
Choice of Stents

ZEUS-Subgroup: **BMS versus Zotarolimus-eluting DES in 1‘606 uncertain DES- candidates, high bleeding risk subgroup (n=821, 66% unstable, 24% VAK), 1 month DAPT**





Ariotti S, et al. J Am Coll Cardiol Intv 2016;9:426–36

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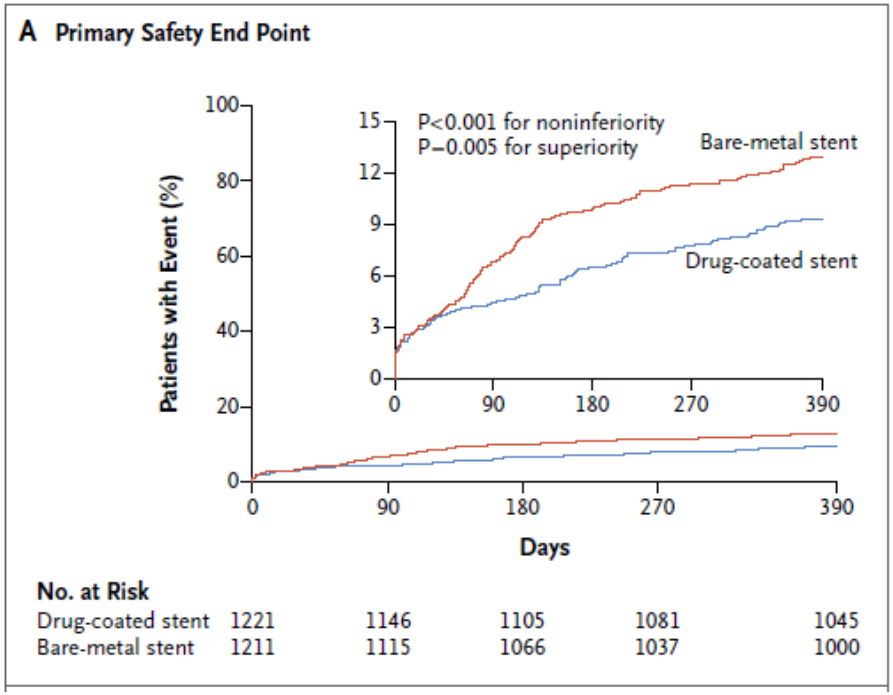
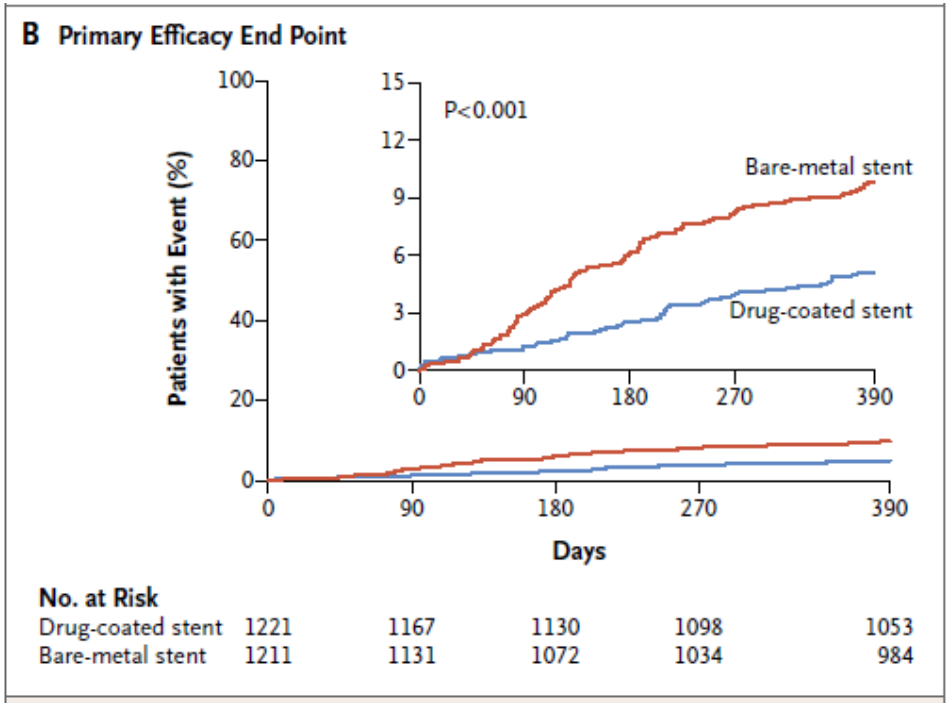
Choice of Stents

LEADERS FREE: BMS versus polymer-free Biolimus-eluting DES in 2‘466 patients at high bleeding-risk (24% unstable, 36% VAK), 1 month DAPT





Urban P, et al. N Engl J Med 2015;373:2038-47

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Choice of Stents

The use of new-generation DES over BMS should be considered among patients requiring OAC.	IIa	B	245, 252

Triple Therapy

The dilemma : 82‘853 AF-patients in Denmark

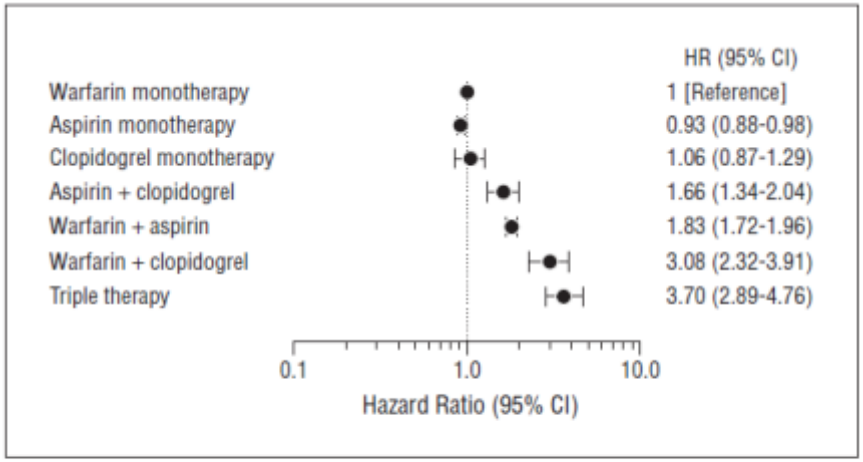

Figure 3. Hazard ratios (HRs) for the risk of nonfatal (n=12 191) and fatal (n=1381) bleeding associated with the use of warfarin, aspirin, clopidogrel, and combinations of these drugs. CI indicates confidence interval.

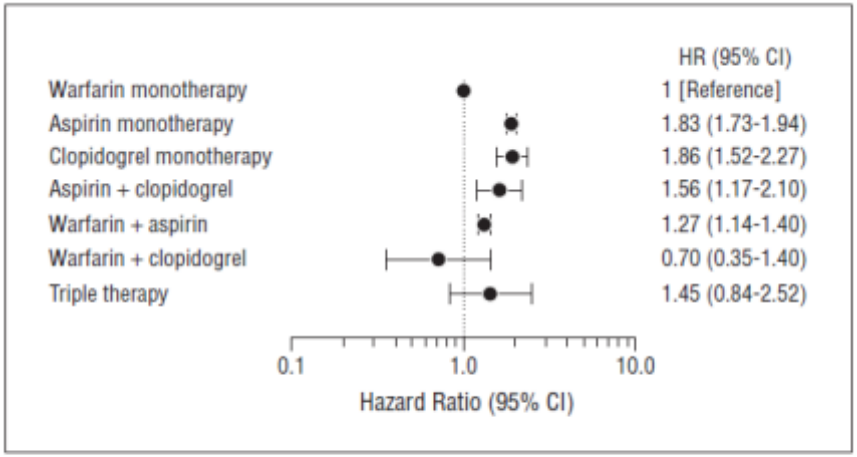

Figure 4. Hazard ratios (HRs) for the risk of nonfatal (n=9785) and fatal (n=3537) ischemic stroke associated with the use of warfarin, aspirin, clopidogrel, and combinations of these drugs. CI indicates confidence interval.

Hansen ML, et al. Arch Intern Med. 2010;170(16):1433-41

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Triple Therapy

BASKET: 818 consecutive patients with coronary stenting, DAPT with ASS & Clopidogrel

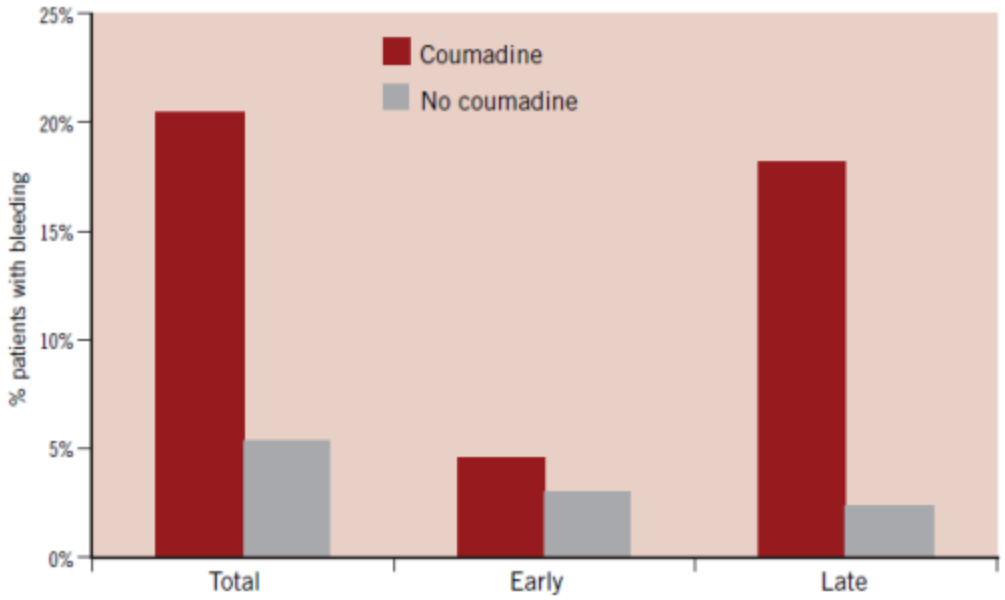

Figure 2. Percentage of total (p=0.001), early (p=0.64) and late bleeding complications (p<0.0001) during three years of follow-up in patients taking (n=44) and not taking coumadin (n=769).

Hälg C, et al. EuroIntervention 2009;5:425-431

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Triple Therapy

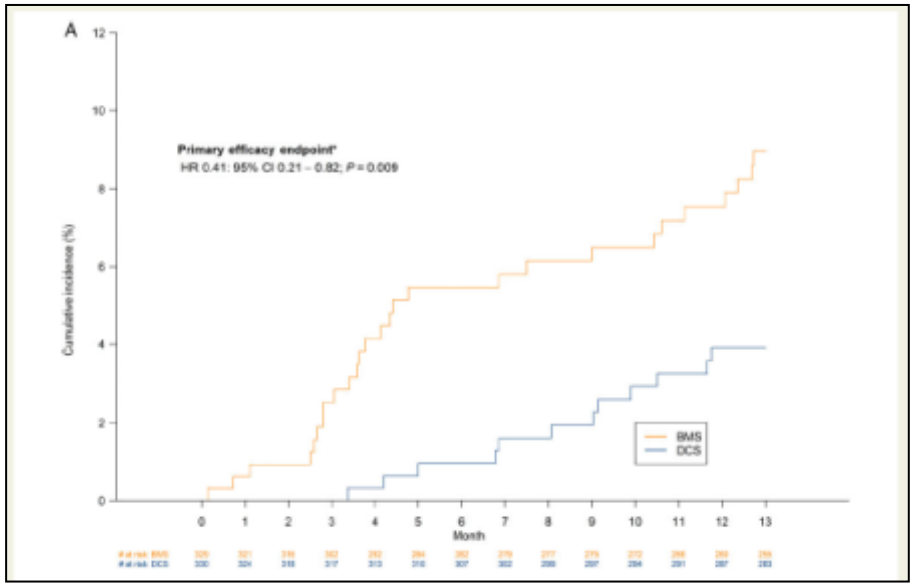
Low bleeding risk: 6 months

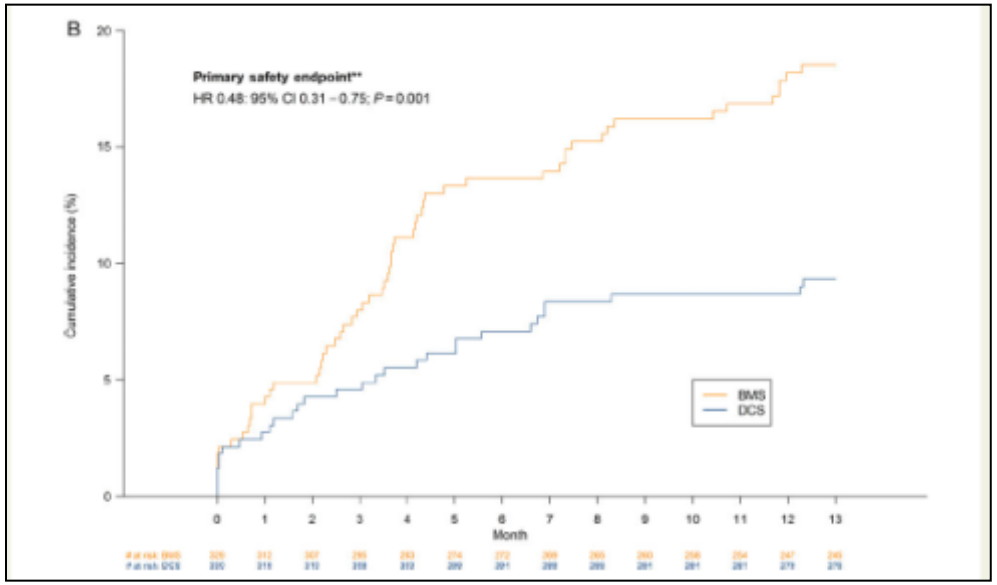
High bleeding risk: 1 month

Antiplatelet treatment			
If at low bleeding risk (HAS-BLED ≤2), triple therapy with OAC, aspirin (75–100 mg/day) and clopidogrel 75 mg/day should be considered for 6 months, followed by OAC and aspirin 75–100 mg/day or clopidogrel (75 mg/day) continued up to 12 months.	IIa	C	
If at high bleeding risk (HAS-BLED ≥3), triple therapy with OAC, aspirin (75–100 mg/day) and clopidogrel 75 mg/day should be considered for a duration of 1 month, followed by OAC and aspirin 75–100 mg/day or clopidogrel (75 mg/day) continued up to 12 months irrespective of the stent type (BMS or new-generation DES).	IIa	C	
The use of ticagrelor or prasugrel as part of triple therapy is not recommended.	III	C	

Triple Therapy

LEADERS FREE Subgroup: BMS versus polymer-free Biolimus-eluting DES in 2‘466 patients at high bleeding-risk, ACS-subgroup (n=659, 25-50% VAK), 1 month DAPT





Naber C, et al. Eur Heart J. 2016 May 17

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Dual Therapy ?

WOEST: Dual therapy (Clopiogrel & OAC) versus triple therapy including ASS after coronary stenting (12 months for DES, 1 months for BMS)

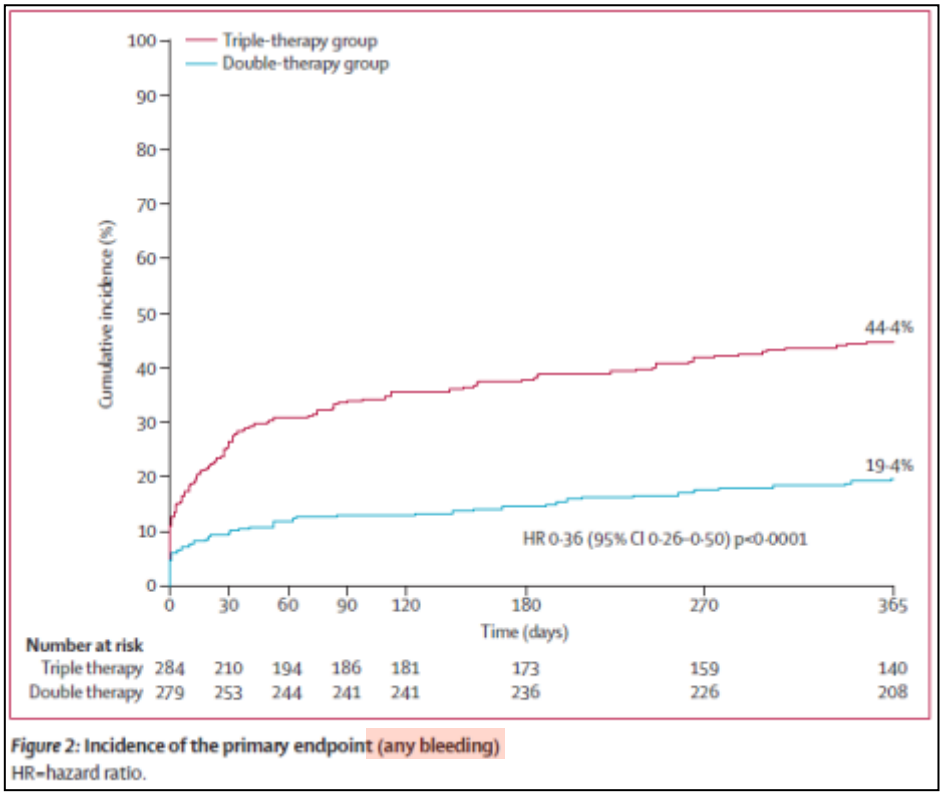

Figure 2: **Incidence of the primary endpoint (any bleeding)**
HR=hazard ratio.

No difference in ischemic endpoints

No difference in major bleeding

Dual therapy with OAC and clopidogrel 75 mg/day may be considered as an alternative to triple antithrombotic therapy in selected patients (HAS-BLED ≥3 and low risk of stent thrombosis).	IIb	B	246, 248

Dewilde WJM, etl al. Lancet 2013; 381: 1107–15

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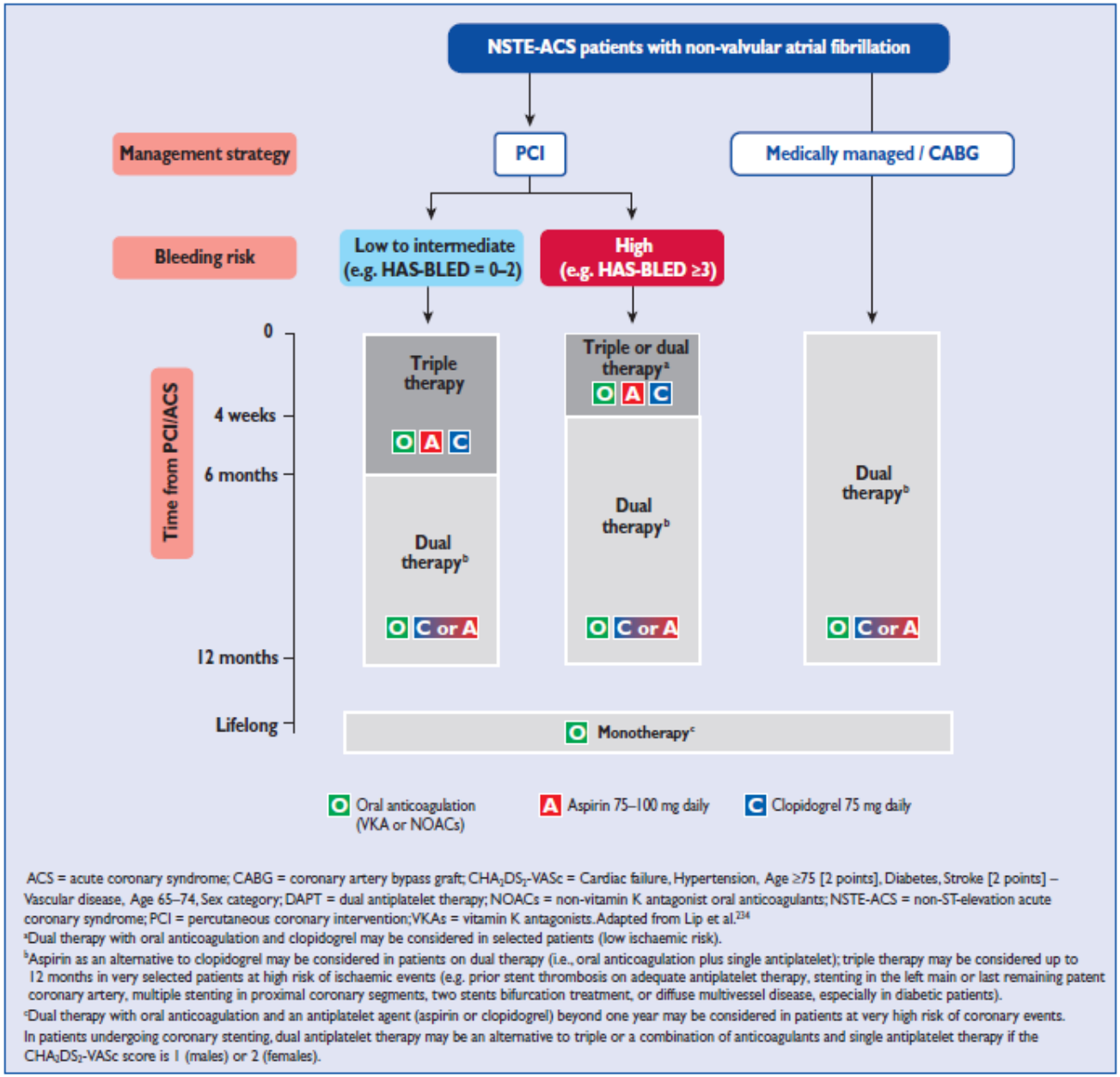

ACS = acute coronary syndrome; CABG = coronary artery bypass graft; CHA_2DS_2-VASc = Cardiac failure, Hypertension, Age ≥75 [2 points], Diabetes, Stroke [2 points] – Vascular disease, Age 65–74, Sex category; DAPT = dual antiplatelet therapy; NOACs = non-vitamin K antagonist oral anticoagulants; NSTE-ACS = 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 very selected patients at high risk of ischaemic events (e.g. prior stent thrombosis on adequate antiplatelet therapy, stenting in the left main or last remaining patent coronary artery, multiple stenting in proximal coronary segments, two stents bifurcation treatment, or diffuse multivessel disease, especially in diabetic patients).

[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).

Figure 5 Antithrombotic strategies in patients with non-ST-elevation acute coronary syndromes (NSTE-ACS) and non-valvular atrial fibrillation.

Thank You For Your Attention !

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