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UNIVERSITÁ DEGLI STUDI DI TORINO

AZIENDA OSPEDALIERO - UNIVERSITARIA
Città della Salute e della Scienza di Torino

Stents and anticoagulation therapy

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Conflicts and disclosures – none

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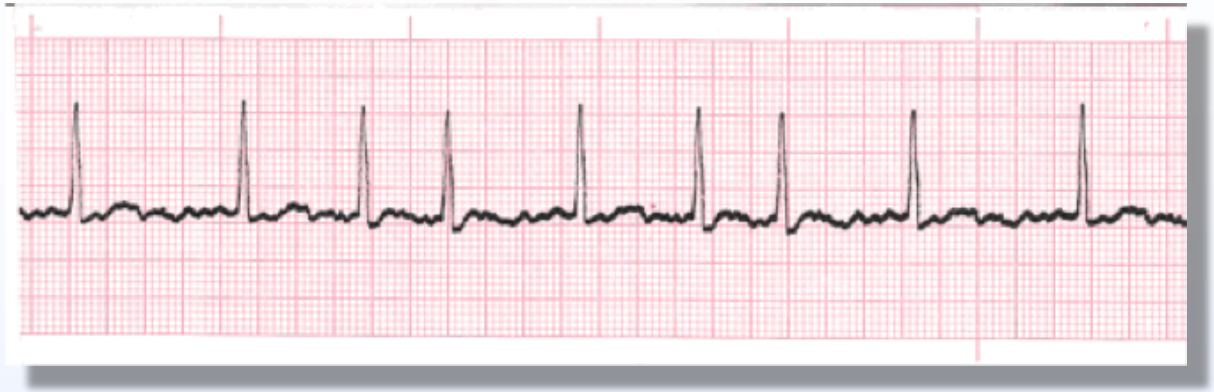

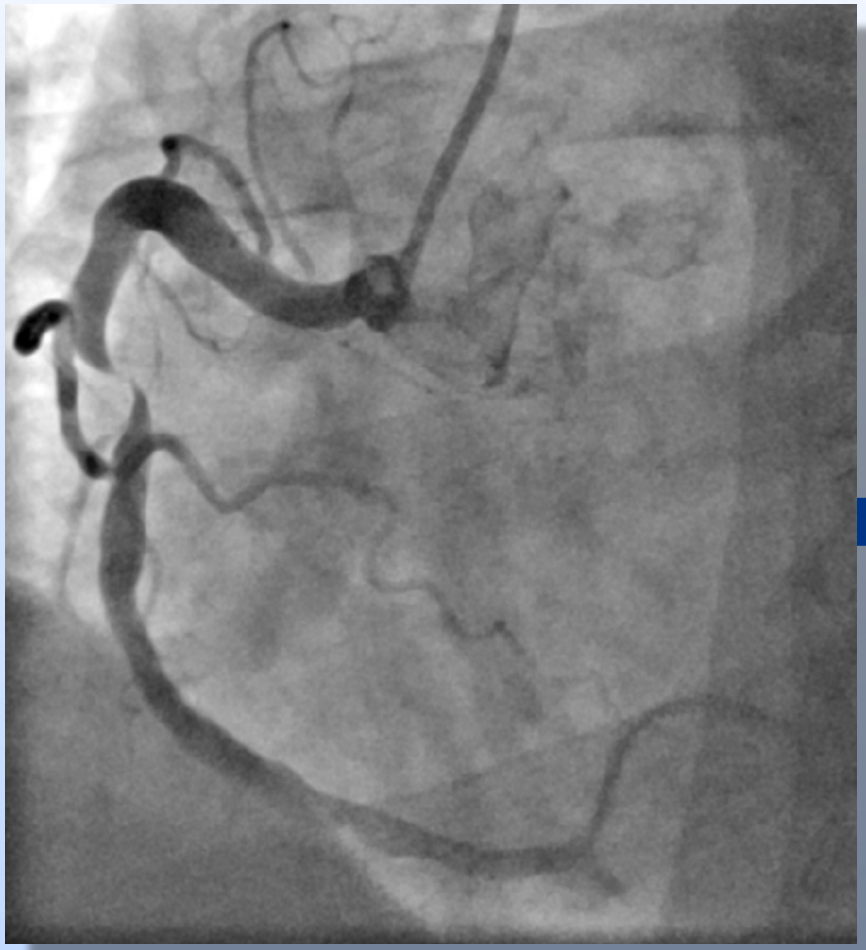

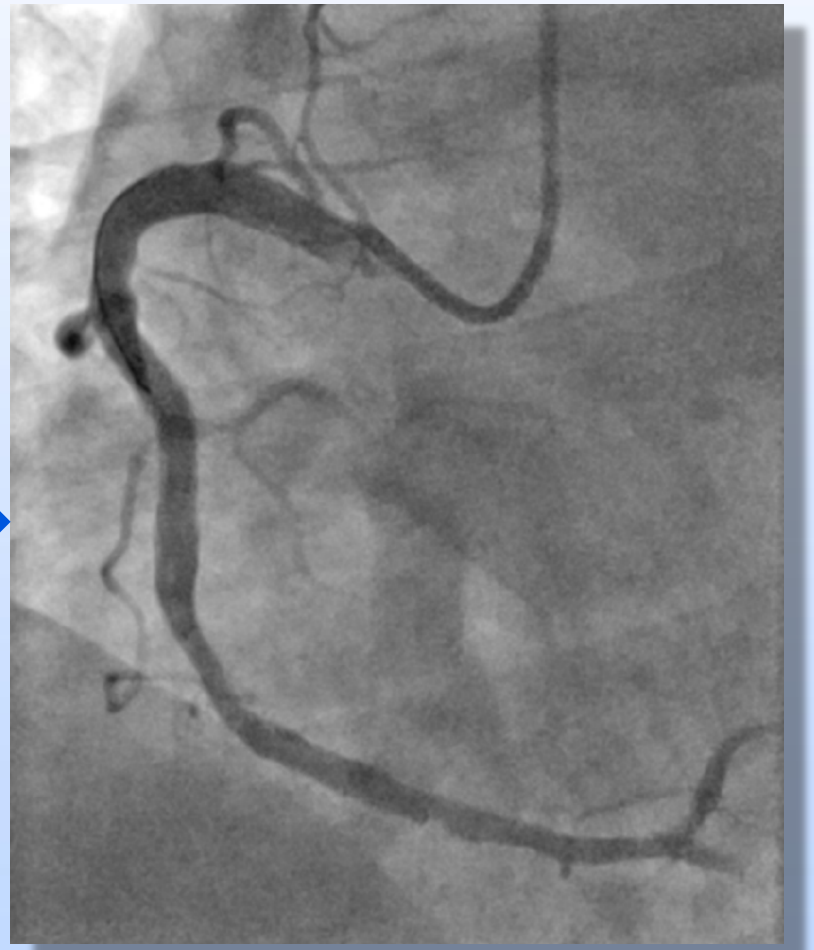

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Pre-PCI

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- Bridging with heparin is over-utilized and highly variable
- Bleeding 13x more common and bigger threat than clotting
- No bridging for most AF
- OAC interruptions unnecessary for most endovascular procedures

Rechenmacher SJ: JACC 2015

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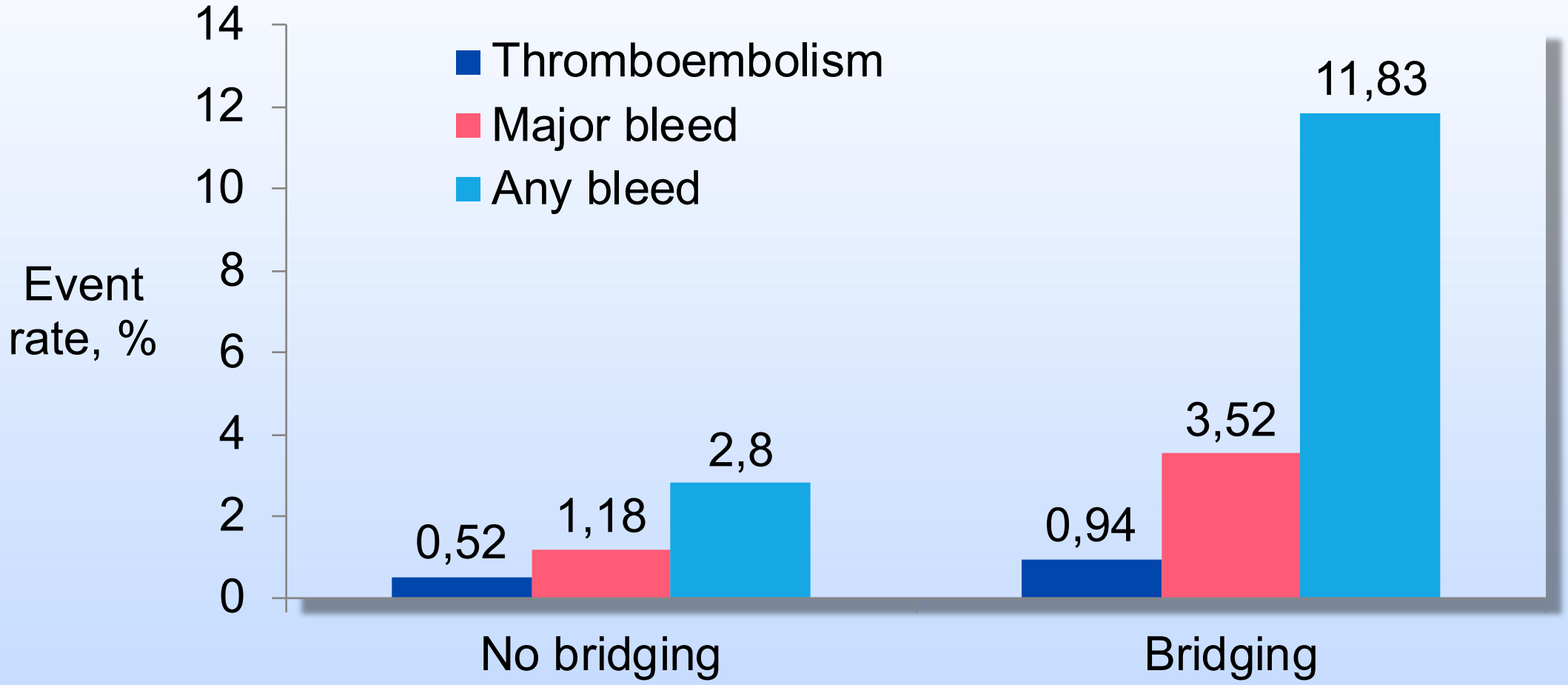
Periprocedural complications (pooled data)



Rechenmacher SJ: JACC 2015

PCI procedure

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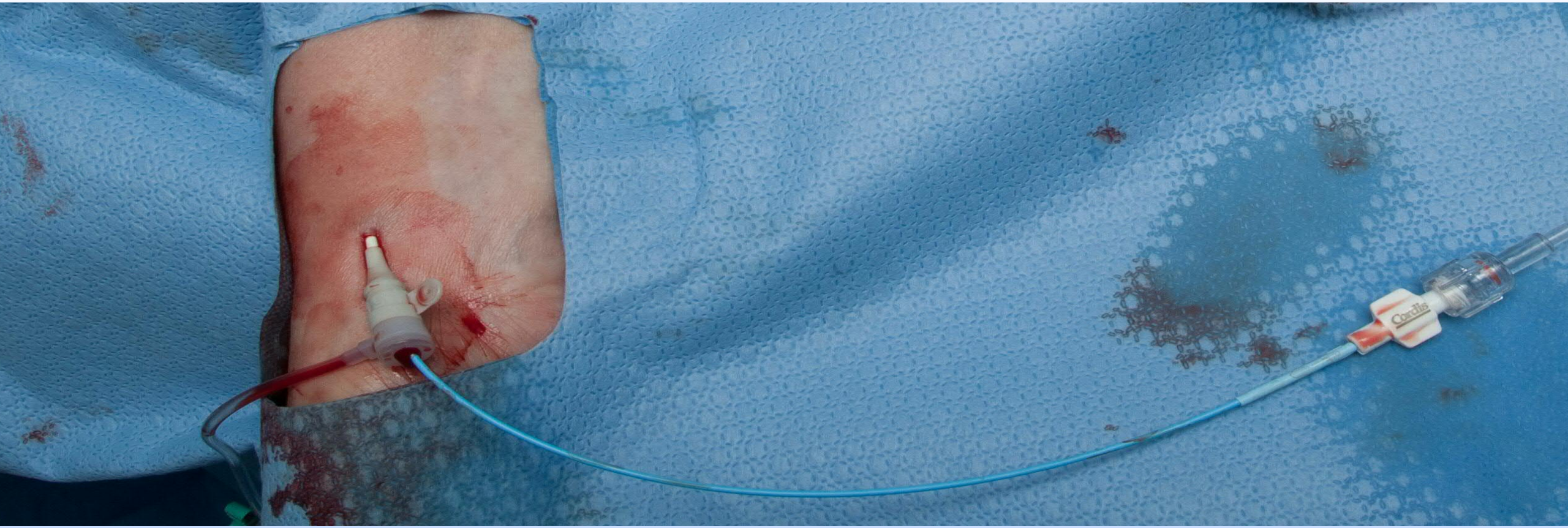
Radial access for PCI



Feasible and safe with therapeutic INR

Uninterrupted DOACs – need more data

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Choice of stent should no longer be a question:

Nothing to lose with DES and
which are safer and more effective than BMS

DES should be default stent

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Post PCI

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Timeline of contemporary RCTs

2013 – WOEST trial (63% DES)

2016 – PIONEER AF-PCI trial (63% DES)

2017 – RE-DUAL PCI trial (83% DES)

2018…..more ongoing

All showed substantial decrease in bleeding compared to triple therapy

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Use of clopidogrel with or without aspirin in patients taking oral anticoagulant therapy and undergoing percutaneous coronary intervention: an open-label, randomised, controlled trial

Willem J M Dewilde, Tom Oirbans, Freek W A Verheugt, Johannes C Kelder, Bart J G L De Smet, Jean-Paul Herrman, Tom Adriaenssens, Mathias Vrolix, Antonius A C M Heestermans, Marije M Vis, Jan G P Tijsen, Arnoud W van 't Hof, Jurriën M ten Berg, for the WOEST study investigators

Lancet 2013; 381: 1107–15
Published Online
February 13, 2013

Summary

Background If percutaneous coronary intervention (PCI) is required in patients taking oral anticoagulants, antiplatelet therapy with aspirin and clopidogrel is indicated, but such triple therapy increases the risk of serious bleeding. We investigated the safety and efficacy of clopidogrel alone compared with clopidogrel plus aspirin.

therapy (hazard ratio [HR] 0·36, 95% CI 0·26–0·50, p<0·0001). In the double-therapy group, six (2·2%) patients had multiple bleeding events, compared with 34 (12·0%) in the triple-therapy group. 11 (3·9%) patients receiving double therapy required at least one blood transfusion, compared with 27 (9·5%) patients in the triple-therapy group (odds ratio from Kaplan-Meier curve 0·39, 95% CI 0·17–0·84, p=0·011).

Interpretation Use of clopiogrel without aspirin was associated with a significant reduction in bleeding complications and no increase in the rate of thrombotic events.

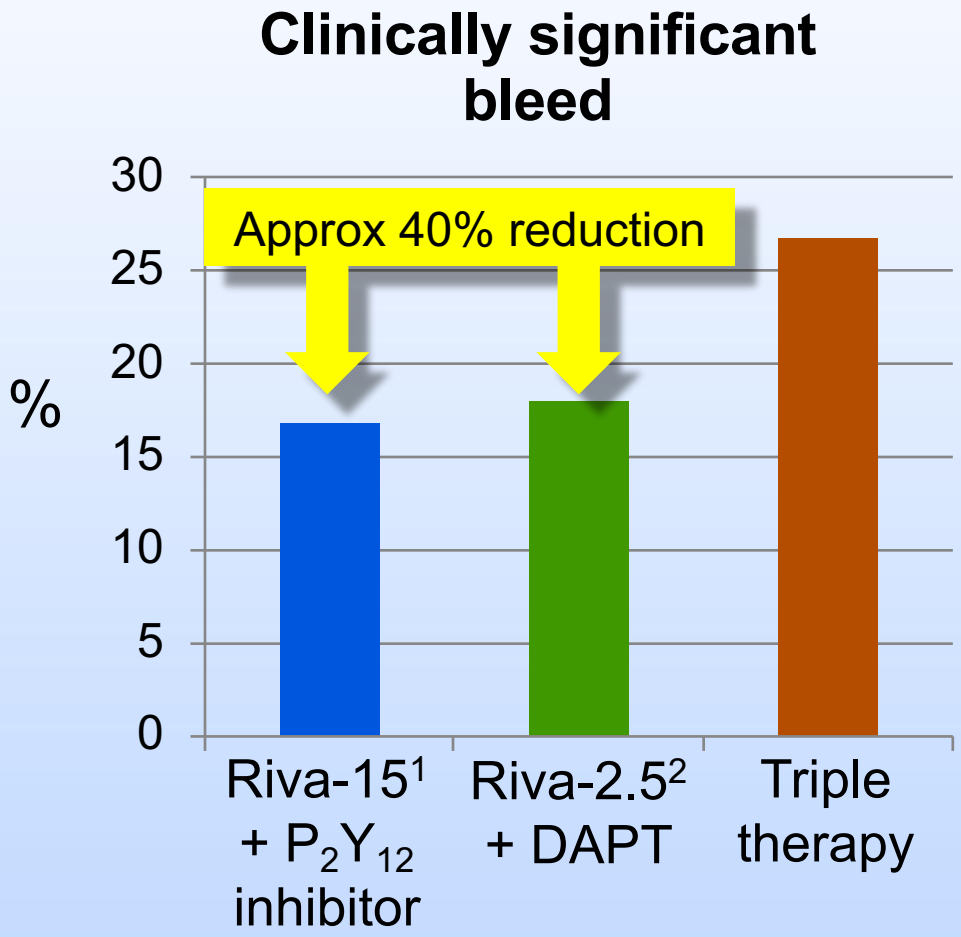
Funding Antonius Ziekenhuis Foundation, Strect Foundation.

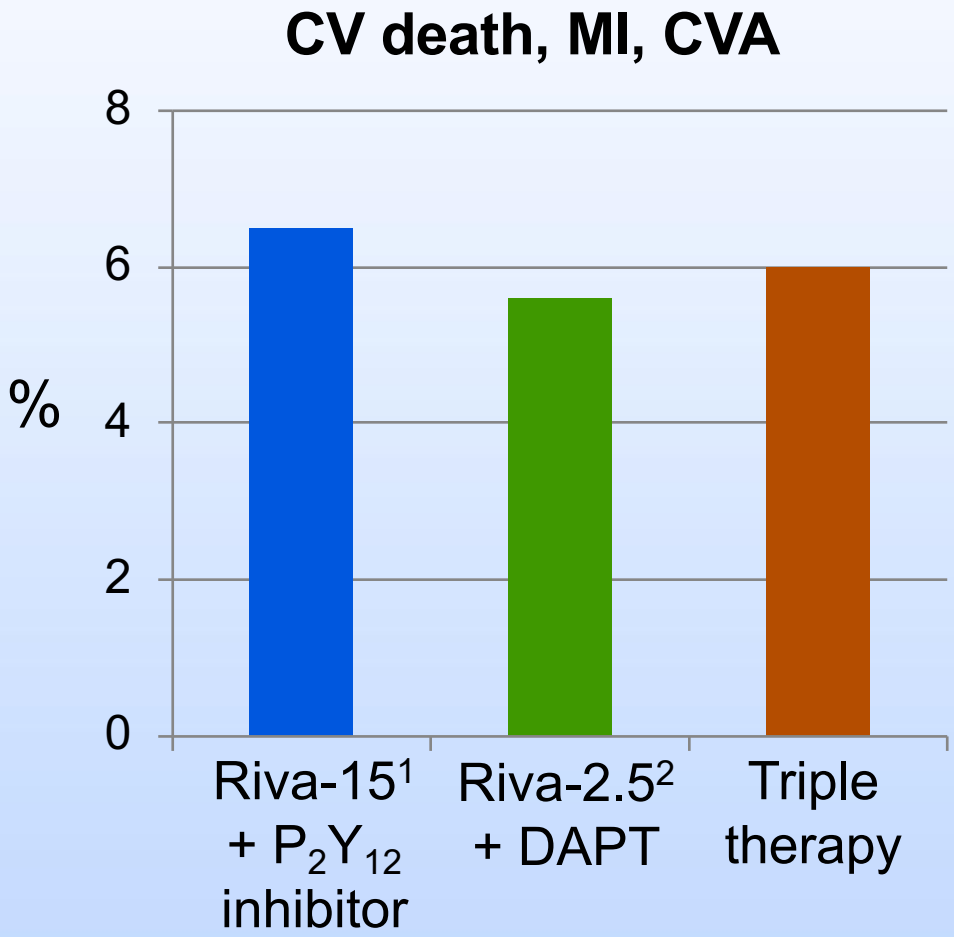
Vrouwe Gasthuis (OLVG), Amsterdam, Netherlands (Prof F W A Verheugt MD, J-P Herrman MD); Department of Cardiology, University Medical Center Groningen, Groningen and Meander Hospital, Amersfoort, Netherlands (B J G L De Smet MD); Department of Cardiology,

Clopidogrel without aspirin associated with significant reduction in bleeding complications and no increase in rate of thrombotic events

Dewilde WJM: Lancet 381:1107, 2013

PIONEER-AF trial





Gibson CM: NEJM 2016

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 19, 2017 VOL. 377 NO. 16

Dual Antithrombotic Therapy with Dabigatran after PCI in Atrial Fibrillation

Patients with AF who had PCI, risk of major bleeding was significantly lower with dual therapy (dabigatran and a P_2Y_{12} inhibitor) compared to triple therapy. Adverse ischemic events were similar.

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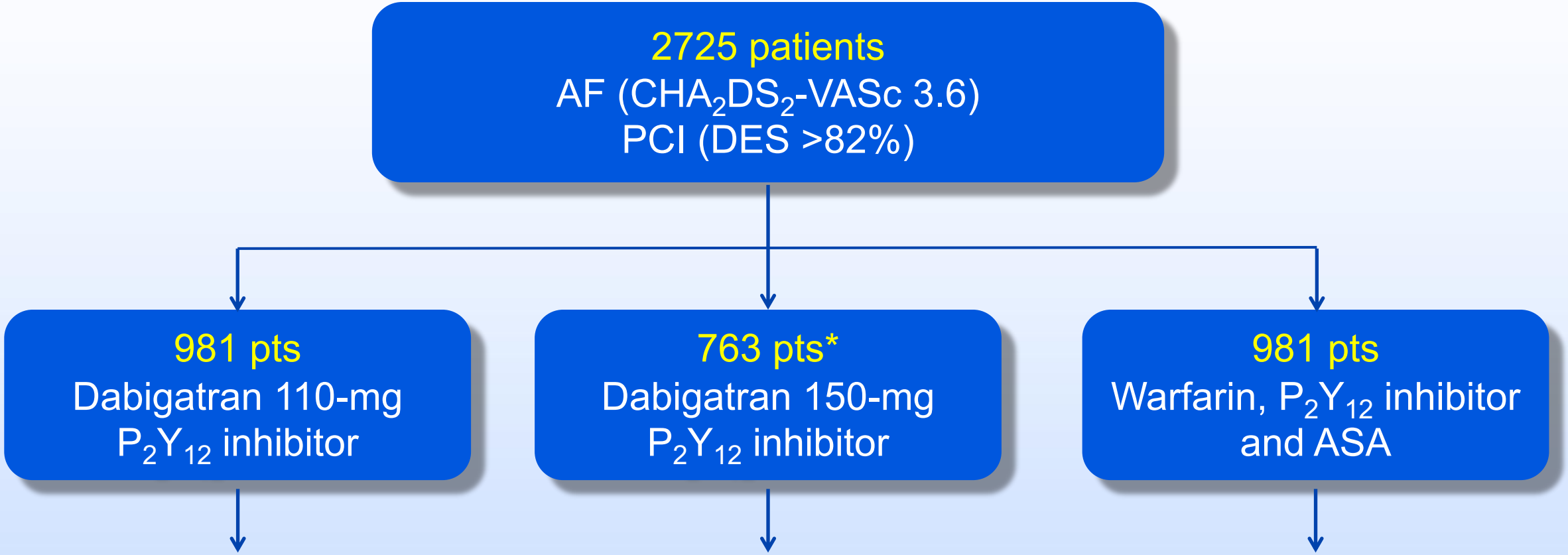

*Excluded elderly pts outside USA

Cannon CP: NEJM 2017

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RE-DUAL Results at 14 Months

Endpoint	Dual 110-mg	Dual 150-mg	Triple therapy	Non inferior
Primary: Major bleeding	15.4%	20.2%	26.9%	Yes
Efficacy: Composite*	13.7%		13.4%	Yes
CVA Def stent thrombosis	1.7% 1.5%	1.2% 1.0%	1.2% 0.9%	

*Thromboembolic event, death or unplanned revascularization

Cannon CP: NEJM 2017

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Commentary on trials of OAC after PCI

Dropping ASA results in significant decrease in major bleeding

No signal of increase in ischemic events

Majority were on clopidogrel, not ticagrelor

Caveats:

- No triple therapy using DOAC
- No dual therapy with warfarin
- No data for apixaban

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3 Danish Nation-wide Registry studies
Atrial fibrillation and CAD

Triple therapy after MI or PCI:
Immediate high risk of fatal and non fatal bleeding, higher at any time than other combinations
No safe window
No diff in thromboembolic risk

In stable CAD, no combination was better than OAC alone which also had lowest bleeding rate over 3+ yr

12,165 patients on OAC 1 year after MI and PCI

OAC and clopidogrel:
Best and safest combination with lowest all-cause mortality

Lamberts M in: Circ 2012; JACC 2013; Circ 2014

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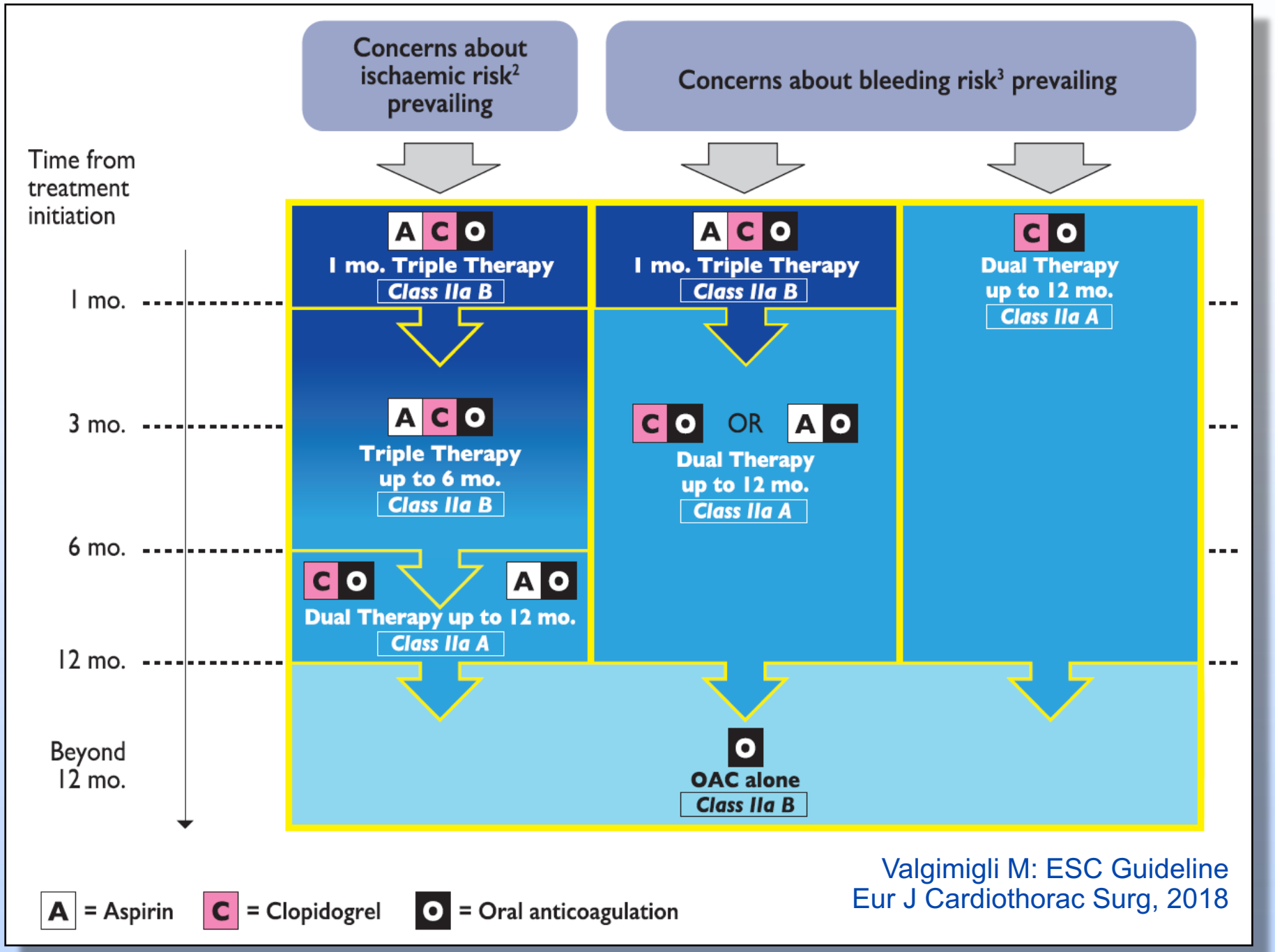


Valgimigli M: ESC Guideline
Eur J Cardiothorac Surg, 2018

JAMA | Original Investigation

Association of Intracerebral Hemorrhage Among Patients Taking Non–Vitamin K Antagonist vs Vitamin K Antagonist Oral Anticoagulants With In-Hospital Mortality

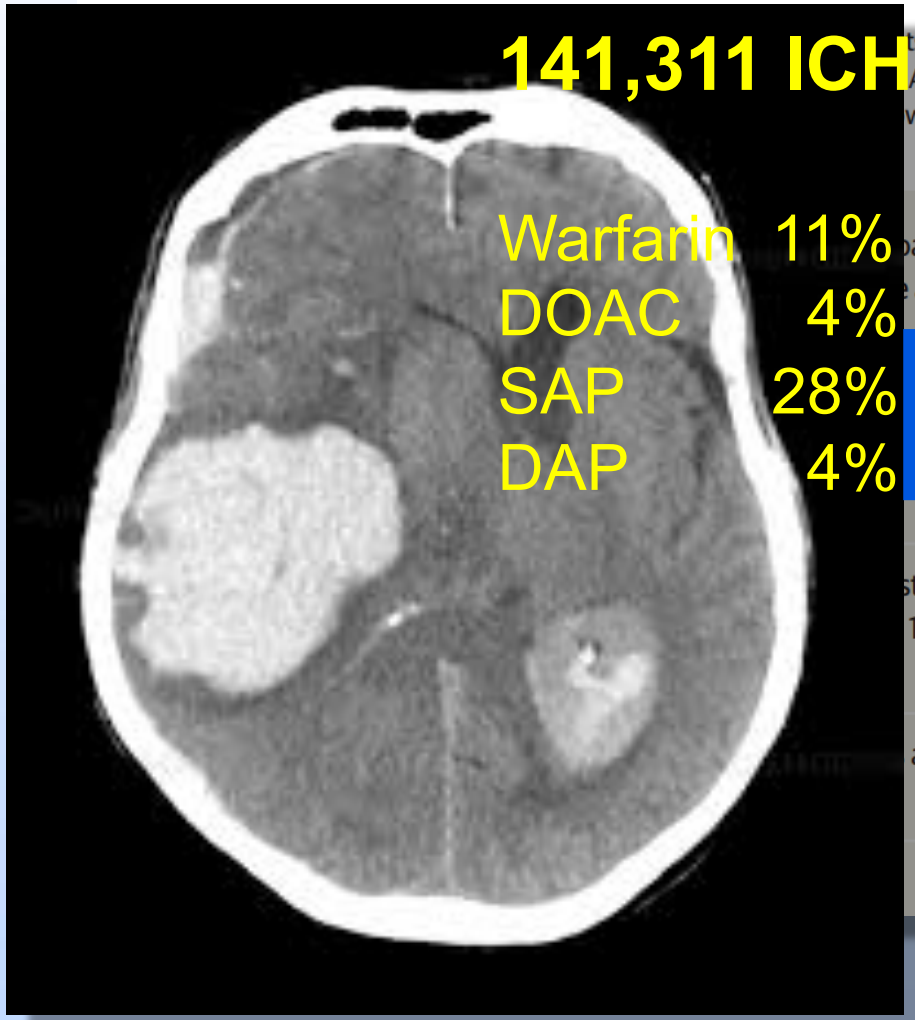
tsouaka, PhD; Jeffrey L. Saver, MD;
Adrian F. Hernandez, MD, MS;
w, MD

Supplemental content

agulants (NOACs) are
are limited data on

study of 141 311 patients
1662 Get With

any use of OACs within 7 days



Mortality

Warfarin	33%
DOAC	27%
No OAC	23%

Inohara T: JAMA 2018

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Influence of Antiplatelet therapy on In-hospital Mortality

	Died	Adjusted risk difference	Adjusted OR
Warfarin			
No antiplatelet agent	32%	Ref	Ref
Single antiplatelet agent	33%	3.2%	1.2
Dual antiplatelet agents	47%	16.5%	2.1

Inohara T: JAMA 2018

Influence of Antiplatelet therapy on In-hospital Mortality

	Died	Adjusted risk difference	Adjusted OR
Warfarin			
No antiplatelet agent	32%	Ref	Ref
Single antiplatelet agent	33%	3.2%	1.2
Dual antiplatelet agents	47%	16.5%	2.1
DOAC			
No antiplatelet agent	26%	Ref	Ref
Single antiplatelet agent	26%	1.4%	1.1
Dual antiplatelet agents	33%	7%	1.4

Inohara T: JAMA 2018

Conclusions

Risk-benefit of triple therapy should be seriously questioned

Dropping ASA results in:

- Significant decrease in major bleeding
- No signal of increase in ischemic events

Majority were on clopidogrel

Ideal combination and duration not known

Consider use of OAC alone long-term

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