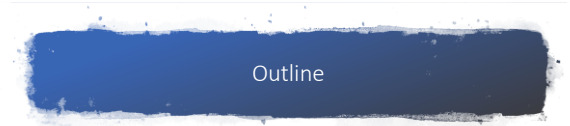




1



Guidelines



The Evidence



Are DAPT regimes similar ?



Real World experience

2

Recommendations	Class	Level
In patients with ACS (NSTEMI-ACS or STEMI) treated with DAPT and undergoing CABG and not requiring long-term OAC therapy, resumption of P2Y ₁₂ inhibitor therapy as soon as deemed safe after surgery and continuation up to 12 months is recommended.	I	C

2017 ESC Focused Update on DAPT in Coronary Artery Bypass, developed in collaboration with EACTS. EuroIntervention 2017; 13(13):2092-2100

3

Graft Failure is common and not always benign

Efficacy and Safety of Edoxipride, an E2F Transcription Factor Decoy, for Prevention of Vein Graft Failure Following Coronary Artery Bypass Graft Surgery

Event	No. Total (%)		OR (95% CI)	P Value
	Edoxipride	Placebo		
Pre-empt				
Vein graft failure	42/95 (43.2)	44/105 (41.9)	1.09 (0.81-1.44)	.68
Vein graft occlusion	6/95 (6.3)	20/105 (19.0)	3.12 (1.58-6.13)	.001
De novo graft				
Vein graft failure	6/122 (4.9)	17/124 (13.7)	3.04 (1.68-5.45)	.001
Vein graft occlusion	0/122 (0.0)	10/124 (8.1)		.03
Internal thoracic artery graft failure	6/105 (5.7)	11/124 (8.9)	1.12 (0.78-1.61)	.53

*All events are defined by the ESC/ACC angiographic criteria. The vein graft percentages are adjusted for imbalances.



Type of Event	No. Total (%) of Patients	
	Edoxipride	Placebo
Re-occlusion	18 (15.6)	17 (16.5)
Death	12 (10.3)	11 (10.6)
Death	23 (20.3)	17 (16.4)

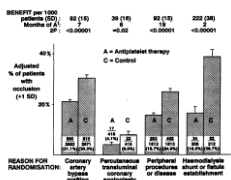
*Re-occlusion is defined as a vein graft failure that is not due to a vein graft failure.

By 12 months 1/3 of SVG's are occluded; 40% of patients had at least one occluded SVG

Vein graft failure profoundly increased death, MI and revascularization

4

What is the Evidence supporting Aspirin use post CABG?

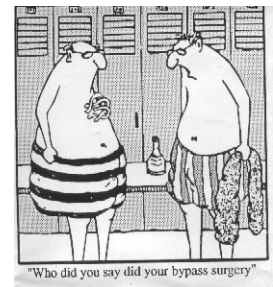


- Anti-Platelet Trialist Collaboration
- (20 trials with CABG)
- Highly significant (41%RRR) reduction in vascular occlusion
- Clinical vascular events reduced by around 40%
- Data on bleeding incomplete
- BMI 1994;308:159-68

5



6



Meta-Analysis of Aspirin Versus Dual Antiplatelet Therapy Following Coronary Artery Bypass Grafting



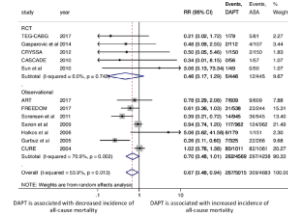
Nayan Agarwal, MD¹, Ahmed N. Mahmoud, MD², Nimesh Kirit Patel, MD³, Ankur Jain, MD⁴, Jalaj Garg, MD⁵, Mohammad Khalid Mojadidi, MD⁶, Sahil Agrawal, MD⁷, Arman Qamar, MD⁸, Harsh Golwala, MD⁹, Tanush Gupta, MD¹⁰, Nirmanmoh Bhatia, MD¹¹, R. David Anderson, MD¹², and Deepak L. Bhatt, MD, MPH^{13*}

8 RCTs and 9 observational studies with a total of 11,135 patients
Mean Follow Up 23 months

Am J Cardiol 2018;121:32-40

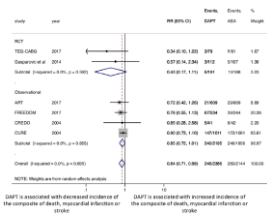
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DAPT associated with a 33% RRR mortality



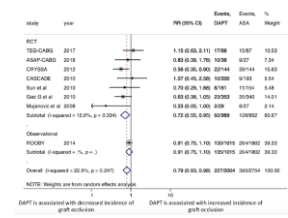
9

DAPT associated with 26% reduction in death, MI or stroke



10

DAPT associated with 31% reduction graft occlusion



11

Meta-Analysis of Aspirin Versus Dual Antiplatelet Therapy Following Coronary Artery Bypass Grafting



Nayan Agarwal, MD¹, Ahmed N. Mahmoud, MD², Nimesh Kirit Patel, MD³, Ankur Jain, MD⁴, Jalaj Garg, MD⁵, Mohammad Khalid Mojadidi, MD⁶, Sahil Agrawal, MD⁷, Arman Qamar, MD⁸, Harsh Golwala, MD⁹, Tanush Gupta, MD¹⁰, Nirmanmoh Bhatia, MD¹¹, R. David Anderson, MD¹², and Deepak L. Bhatt, MD, MPH^{13*}

DAPT appears to be associated with a reduction in graft occlusion, major adverse cardiac events, and all-cause mortality, without significantly increasing major bleeding compared with aspirin monotherapy in patients undergoing CABG.

Am J Cardiol 2018;121:32-40

12

Meta-Analysis of Aspirin Versus Dual Antiplatelet Therapy Following Coronary Artery Bypass Grafting



Nayan Agarwal, MD¹, Ahmed N. Mahmoud, MD², Nimesh Kirit Patel, MD³, Ankur Jain, MD⁴, Jalaj Garg, MD⁵, Mohammad Khalid Mojadidi, MD⁶, Sahil Agrawal, MD⁷, Arman Qamar, MD⁸, Harsh Golwala, MD⁹, Tanush Gupta, MD¹⁰, Nirmanmoh Bhatia, MD¹¹, R. David Anderson, MD¹², and Deepak L. Bhatt, MD, MPH^{13*}

- Mixed Surgical techniques
- Majority ACS
- More potent P2Y12 inhibitors not included

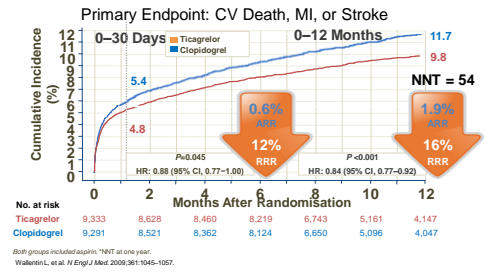
Am J Cardiol 2018;121:32-40

13

Clopidogrel or Ticagrelor ?

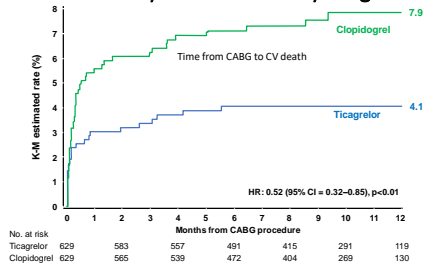
14

PLATO: 18624 pts Mod to High Risk ACS Asp + Ticagrelor v Asp + Clopidogrel:



15

PLATO CABG: 1261 Patients undergoing CABG within 7 days cessation study drug



17

Bleeding from time of CABG

Characteristic	Ticagrelor (n=632)	Clopidogrel (n=629)	Odds Ratio (95% CI)	p-value
CABG-related bleeding				
Major bleeding	81.2	80.1	1.07 (0.80, 1.43)	0.67
Life-threatening/fatal bleeding	43.7	42.6	1.04 (0.83, 1.31)	0.73
Fatal bleeding	0.8	1.0	0.83 (0.20, 3.28)	0.77
All intracranial bleeding post-CABG*	0.2	0.2	1.01 (0.06, 16.09)	1.00
TIMI major bleeding	59.3	57.6	1.08 (0.85, 1.36)	0.53
TIMI minor bleeding	21.0	21.6	0.97 (0.73, 1.28)	0.84
GUSTO severe bleeding	10.6	12.2	0.85 (0.59, 1.22)	0.38

Legend: 0.2 0.5 1.0 2.0
 Clopidogrel better (green bar), Ticagrelor better (red bar)

Values are incidences = number of events divided by n, not rates.
 *Hazard ratio. Both CABG-related and non-related.

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 doi:10.1016/j.jacc.2010.10.029

Acute Coronary Syndromes

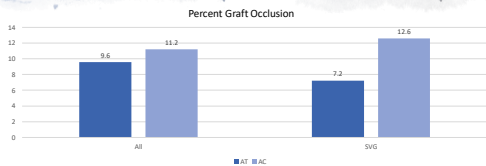
Ticagrelor Versus Clopidogrel in Patients With Acute Coronary Syndromes Undergoing Coronary Artery Bypass Surgery

Results From the PLATO (Platelet Inhibition and Patient Outcomes) Trial

In ACS patients needing CABG during dual antiplatelet treatment, ticagrelor as compared with clopidogrel reduces CV and total death without an increase in major bleeding.

20

IMPACT: RCT 100 pts CABG post ACS AT v AC Primary Endpoint: Graft Patency at 12 months



23

Other Findings

No significant difference in bleeding or clinical events

1 in 4 people were switched from Ticagrelor to Clopidogrel

25

JAMA | Original Investigation

Effect of Ticagrelor Plus Aspirin, Ticagrelor Alone, or Aspirin Alone on Saphenous Vein Graft Patency 1 Year After Coronary Artery Bypass Grafting A Randomized Clinical Trial

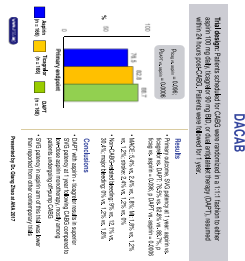
Qiang Zhao, MD, PhD; Yunpeng Zhu, MD; Zhiyun Xu, MD, PhD; Zhaoyun Cheng, MD, PhD; Ju Mei, MD, PhD; Xin Chen, MD, PhD; Xiaowei Wang, MD, PhD
 JAMA. 2018;319(16):1677-1686. doi:10.1001/jama.2018.3197

Ticagrelor (90mg BD) + aspirin (100mg once daily) (n = 168), ticagrelor (90mg BD daily) (n = 166) or aspirin (100mg once daily) (n = 166) within 24 hours CABG.

Primary Outcome: SVG patency at 12 months (CT assessment)

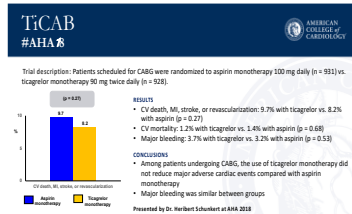
26

In patients undergoing CABG with SVG, ticagrelor + aspirin significantly increased graft patency after 1 year vs aspirin alone



28

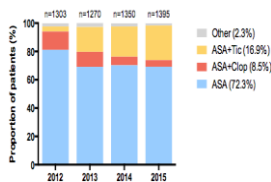
No advantage monotherapy with P2Y12 inhibitor confirmed in TiCAB



29

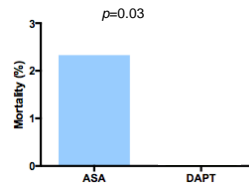
The Real World: SWEDEHEART Registry

- 5196 patients ACS CABG
- 3847 Aspirin
- 450 Aspirin + Clopidogrel
- 899 Aspirin + Ticagrelor



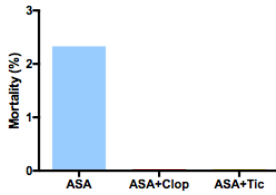
33

One-year mortality after discharge



34

One-year mortality after discharge



35

Should All Patients Post CABG receive DAPT?

No
if high bleeding risk or elective situation

Yes
Post ACS when concerns post op bleeding resolved
Aspirin + Ticagrelor appears logical combination

39

How do we improve DAPT post CABG with ACS

Education in appropriate forums

Pragmatic timing of prescribing

Have Discharge Medication Performance indicators on surgical wards embedded in Dendrite

40

Thank You



Crowds panic as flooding threatens Ireland...

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