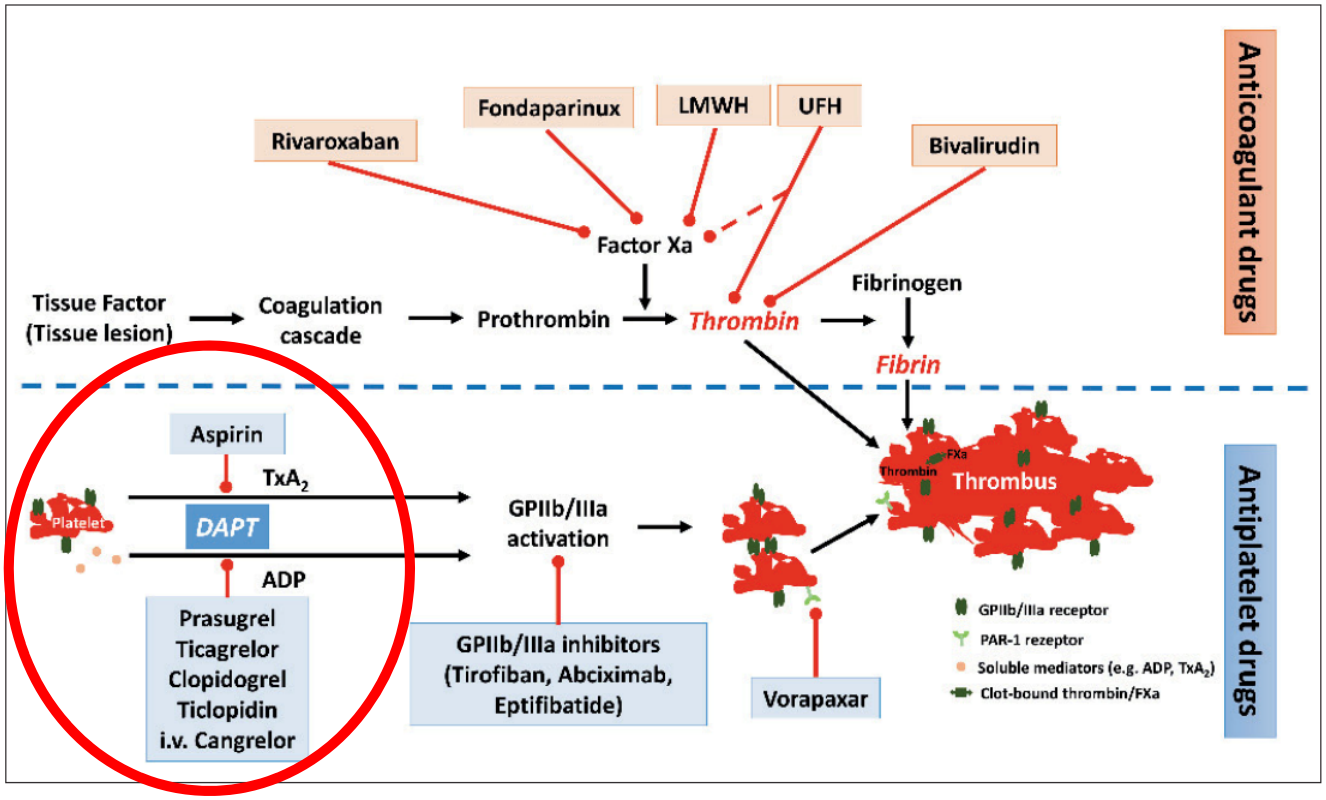
Insights from ISAR REACT5 trial

Mamas A. Mamas
Professor of Cardiology
University of Keele
@MMamas1973

Antithrombotic drugs in the treatment of ACS

Keele Cardiovascular Research Group

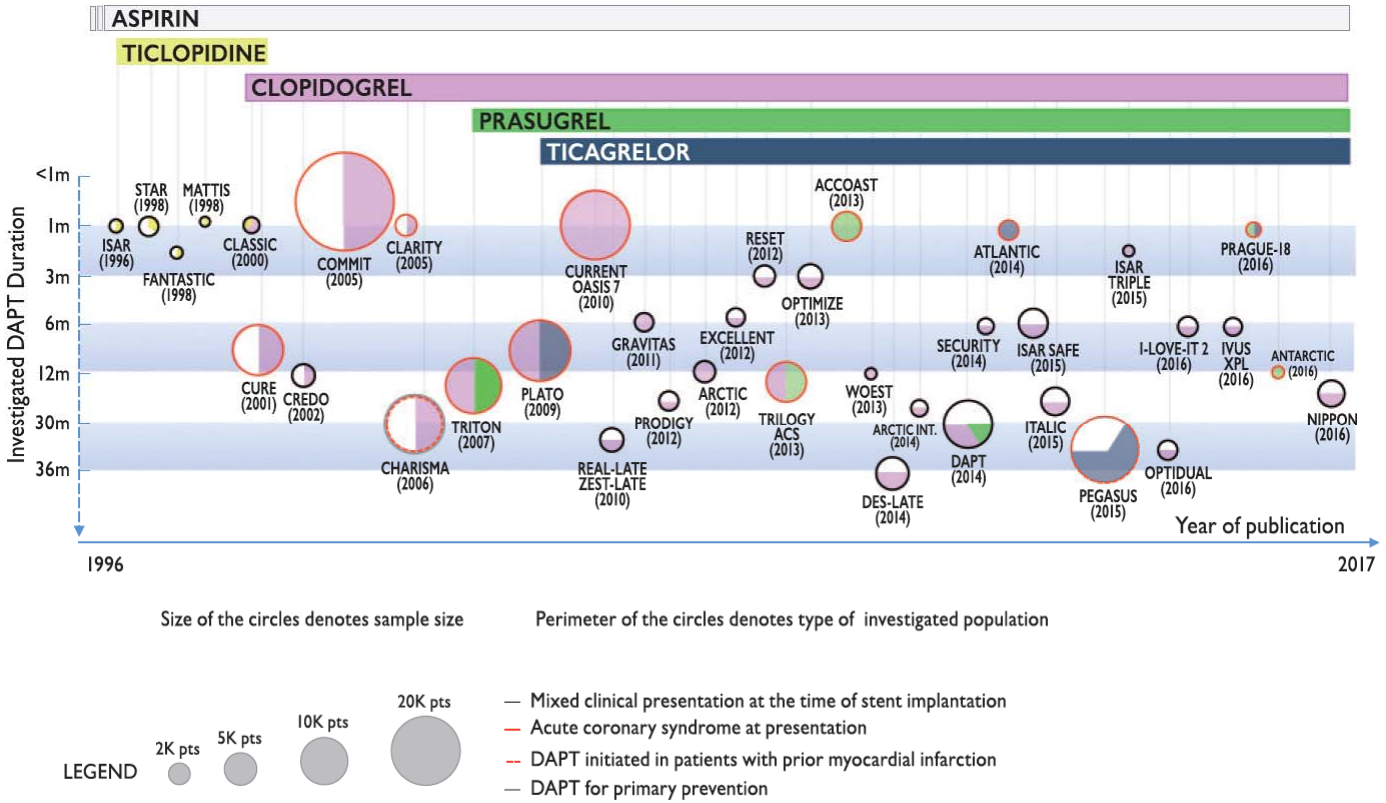


DAPT, dual antiplatelet therapy; LMWH, low molecular weight heparin; UFH, unfractionated heparin

Sibbing et al. Thromb Haemost 2017;117:1240–8

History of DAPT therapy in patients with coronary disease, a 20 year journey

Keele Cardiovascular Research Group



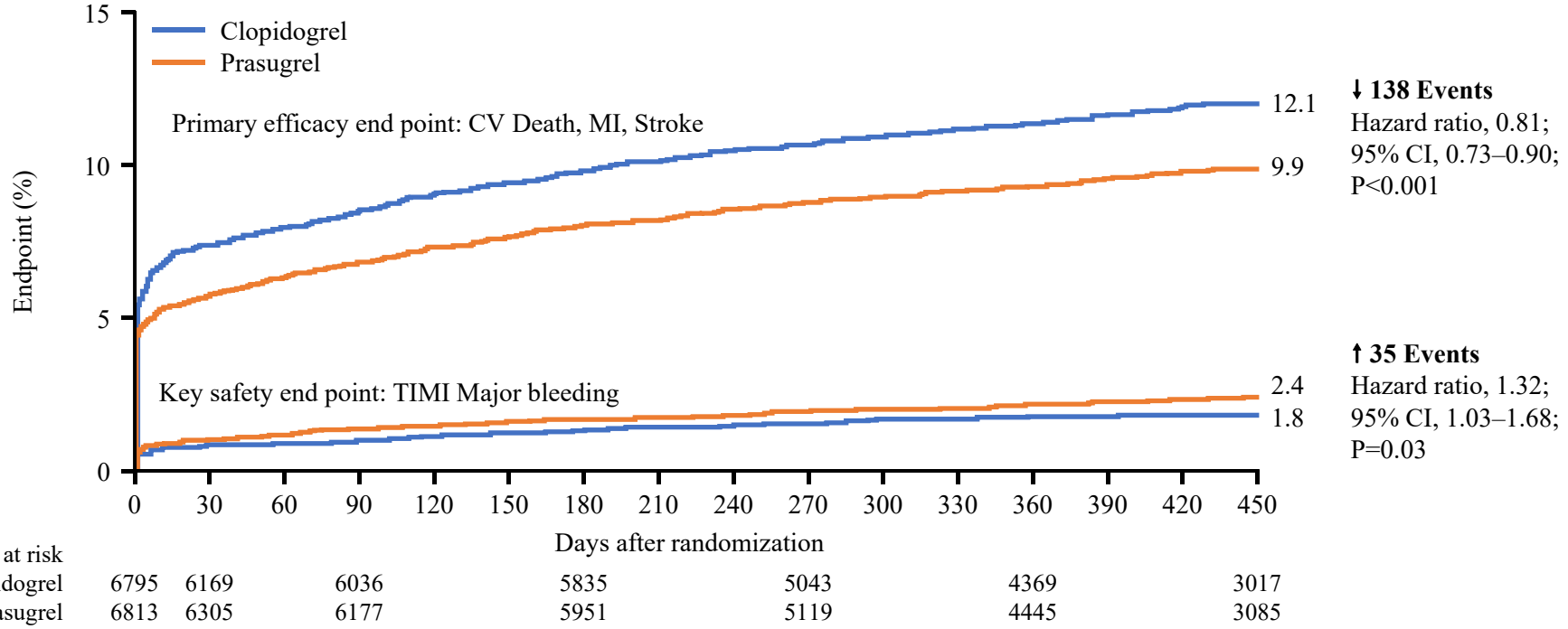
Valgimigli et al. Eur Heart J 2018;39:213–60

The NEW ENGLAND JOURNAL of MEDICINE
ESTABLISHED IN 1812 NOVEMBER 15, 2007 VOL. 357 NO. 20

Keele Cardiovascular Research Group

Prasugrel versus Clopidogrel in Patients with Acute Coronary Syndromes

Stephen D. Wiviott, M.D., Eugene Braunwald, M.D., Carolyn H. McCabe, B.S., Gilles Montalescot, M.D., Ph.D., Witold Ruzyllo, M.D., Shmuel Gottlieb, M.D., Franz-Joseph Neumann, M.D., Diego Ardissino, M.D., Stefano De Servi, M.D., Sabina A. Murphy, M.P.H., Jeffrey Riesmeyer, M.D., Govinda Weerakkody, Ph.D., C. Michael Gibson, M.D., and Elliott M. Antman, M.D., for the TRITON–TIMI 38 Investigators*



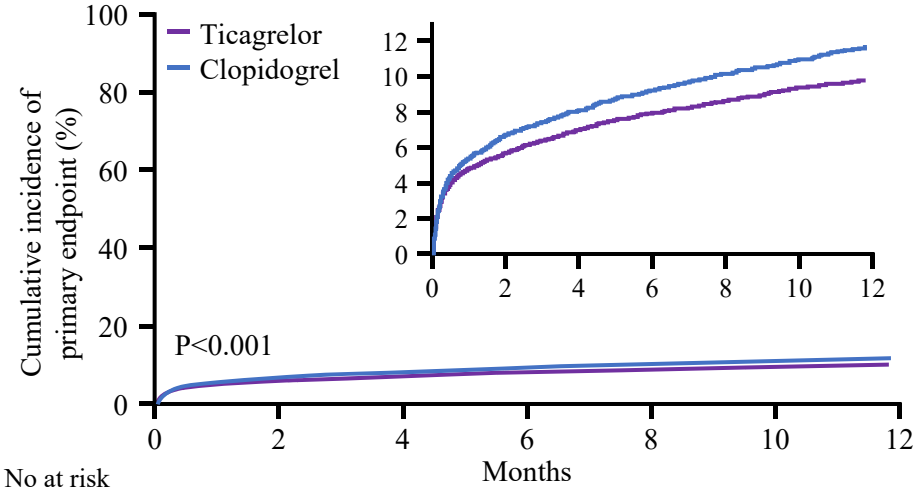
Wiviott et al. N Engl J Med 2007;357:2001–15

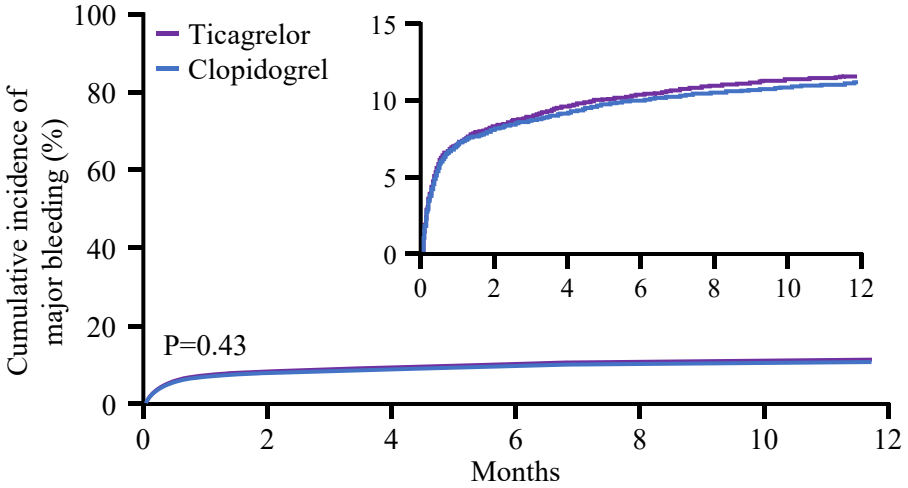
The NEW ENGLAND JOURNAL of MEDICINE
ESTABLISHED IN 1812 SEPTEMBER 10, 2009 VOL. 361 NO. 11

Keele Cardiovascular Research Group

Ticagrelor versus Clopidogrel in Patients with Acute Coronary Syndromes

Lars Wallentin, M.D., Ph.D., Richard C. Becker, M.D., Andrzej Budaj, M.D., Ph.D., Christopher P. Cannon, M.D., Håkan Emanuelsson, M.D., Ph.D., Claes Held, M.D., Ph.D., Jay Horrow, M.D., Steen Husted, M.D., D.Sc., Stefan James, M.D., Ph.D., Hugo Katus, M.D., Kenneth W. Mahaffey, M.D., Benjamin M. Scirica, M.D., M.P.H., Allan Skene, Ph.D., Philippe Gabriel Steg, M.D., Robert F. Storey, M.D., D.M., and Robert A. Harrington, M.D., for the PLATO Investigators*





No at risk							
Ticagrelor	9333	8628	8460	8219	6743	5161	4147
Clopidogrel	9291	8521	8362	8124	6650	5096	4047

9235	7246	6826	6545	5129	3783	3433
9186	7305	6930	6670	5209	3841	3479

Primary Endpoint: Death from Vascular causes, MI or stroke
Ticagrelor 9.8%, Clopidogrel 11.7%
HR 0.84 95% CI 0.77-0.92

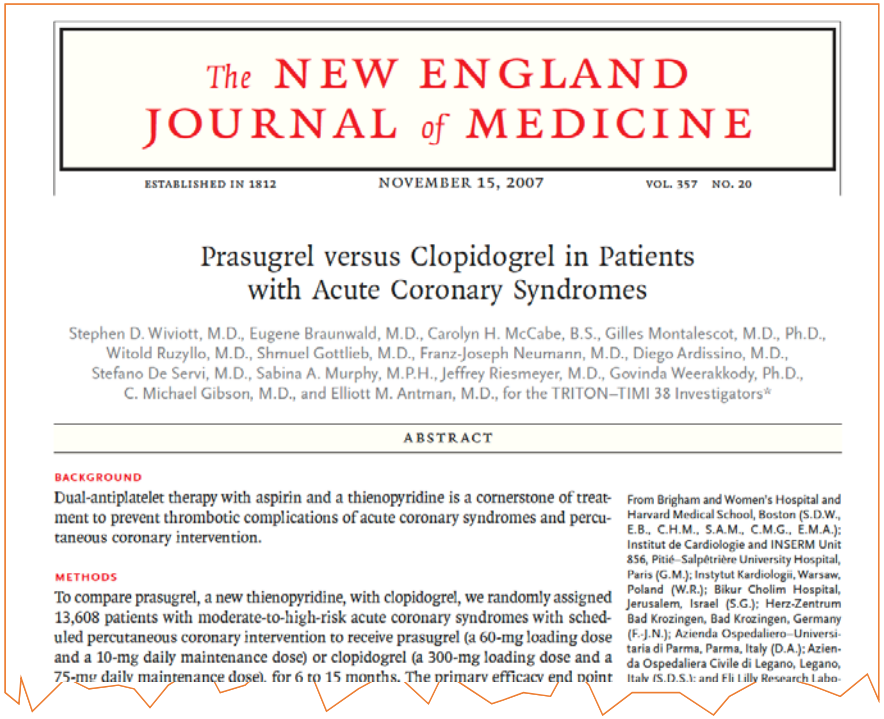
Safety endpoint: Major Bleeding
HR 1.04 95% CI 0.95-1.13

CI, confidence interval; HR; hazard ratio; MI, myocardial infarction

Wallentin L et al. N Engl J Med. 2009;361:1045–57

Both Prasugrel and Ticagrelor are superior to Clopidogrel: Which should we use?

Keele Cardiovascular Research Group



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 NOVEMBER 15, 2007 VOL. 357 NO. 20

Prasugrel versus Clopidogrel in Patients with Acute Coronary Syndromes

Stephen D. Wiviott, M.D., Eugene Braunwald, M.D., Carolyn H. McCabe, B.S., Gilles Montalescot, M.D., Ph.D., Witold Ruzyllo, M.D., Shmuel Gottlieb, M.D., Franz-Joseph Neumann, M.D., Diego Ardissino, M.D., Stefano De Servi, M.D., Sabina A. Murphy, M.P.H., Jeffrey Riesmeyer, M.D., Govinda Weerakkody, Ph.D., C. Michael Gibson, M.D., and Elliott M. Antman, M.D., for the TRITON–TIMI 38 Investigators*

ABSTRACT

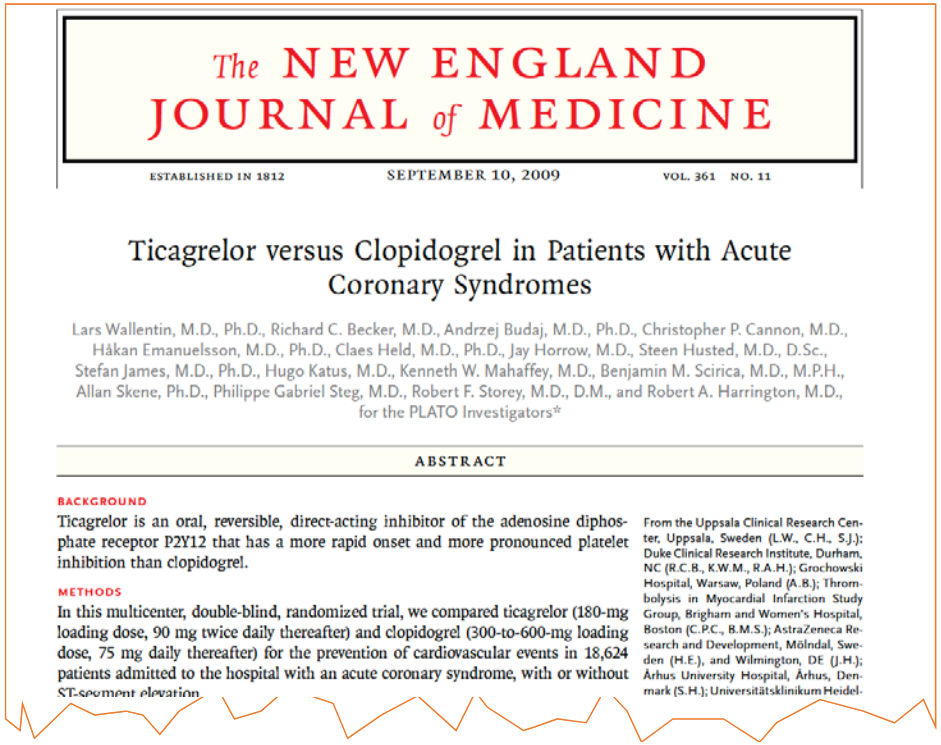
BACKGROUND

Dual-antiplatelet therapy with aspirin and a thienopyridine is a cornerstone of treatment to prevent thrombotic complications of acute coronary syndromes and percutaneous coronary intervention.

METHODS

To compare prasugrel, a new thienopyridine, with clopidogrel, we randomly assigned 13,608 patients with moderate-to-high-risk acute coronary syndromes with scheduled percutaneous coronary intervention to receive prasugrel (a 60-mg loading dose and a 10-mg daily maintenance dose) or clopidogrel (a 300-mg loading dose and a 75-mg daily maintenance dose), for 6 to 15 months. The primary efficacy end point

From Brigham and Women's Hospital and Harvard Medical School, Boston (S.D.W., E.B., C.H.M., S.A.M., C.M.G., E.M.A.); Institut de Cardiologie and INSERM Unit 856, Pitié–Salpêtrière University Hospital, Paris (G.M.); Instytut Kardiologii, Warsaw, Poland (W.R.); Bikur Cholim Hospital, Jerusalem, Israel (S.G.); Herz-Zentrum Bad Krozingen, Bad Krozingen, Germany (F.-J.N.); Azienda Ospedaliero–Universitaria di Parma, Parma, Italy (D.A.); Azienda Ospedaliera Civile di Legano, Legano, Italy (S.D.S.); and Eli Lilly Research Labo-



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 10, 2009 VOL. 361 NO. 11

Ticagrelor versus Clopidogrel in Patients with Acute Coronary Syndromes

Lars Wallentin, M.D., Ph.D., Richard C. Becker, M.D., Andrzej Budaj, M.D., Ph.D., Christopher P. Cannon, M.D., Håkan Emanuelsson, M.D., Ph.D., Claes Held, M.D., Ph.D., Jay Horrow, M.D., Steen Husted, M.D., D.Sc., Stefan James, M.D., Ph.D., Hugo Katus, M.D., Kenneth W. Mahaffey, M.D., Benjamin M. Scirica, M.D., M.P.H., Allan Skene, Ph.D., Philippe Gabriel Steg, M.D., Robert F. Storey, M.D., D.M., and Robert A. Harrington, M.D., for the PLATO Investigators*

ABSTRACT

BACKGROUND

Ticagrelor is an oral, reversible, direct-acting inhibitor of the adenosine diphosphate receptor P2Y12 that has a more rapid onset and more pronounced platelet inhibition than clopidogrel.

METHODS

In this multicenter, double-blind, randomized trial, we compared ticagrelor (180-mg loading dose, 90 mg twice daily thereafter) and clopidogrel (300-to-600-mg loading dose, 75 mg daily thereafter) for the prevention of cardiovascular events in 18,624 patients admitted to the hospital with an acute coronary syndrome, with or without ST-segment elevation.

From the Uppsala Clinical Research Center, Uppsala, Sweden (L.W., C.H., S.J.); Duke Clinical Research Institute, Durham, NC (R.C.B., K.W.M., R.A.H.); Grochowski Hospital, Warsaw, Poland (A.B.); Thrombolysis in Myocardial Infarction Study Group, Brigham and Women's Hospital, Boston (C.P.C., B.M.S.); AstraZeneca Research and Development, Mölndal, Sweden (H.E.), and Wilmington, DE (J.H.); Århus University Hospital, Århus, Denmark (S.H.); Universitätsklinikum Heidel-

ESC 2018 Guidelines on myocardial revascularisation

Keele Cardiovascular Research Group

NSTE-ACS:

Recommendations	Class[a]	Level[b]
Pre-treatment and antiplatelet therapy		
A $P2Y_{12}$ inhibitor is recommended in addition to aspirin, maintained over 12 months unless there are contraindications such as an excessive risk of bleeding.[701,702,722,723] Options are:	I	A
• Prasugrel in $P2Y_{12}$-inhibitor naïve patients who proceed to PCI (60 mg loading dose, 10 mg daily dose).[701]	I	B
• Ticagrelor irrespective of the preceding $P2Y_{12}$ inhibitor regimen (180 mg loading dose, 90 mg b.i.d.).[702]	I	B
• Clopidogrel (600 mg loading dose, 75 mg daily dose) only when prasugrel or ticagrelor are not available or are contraindicated.[722–724]	I	B

STEMI:

Recommendations	Class[a]	Level[b]
Pre-treatment and antiplatelet therapy		
A potent $P2Y_{12}$ inhibitor (prasugrel or ticagrelor), or clopidogrel if these are not available or are contraindicated, is recommended before (or at latest at the time of) PCI and maintained over 12 months, unless there are contraindications such as excessive risk of bleeding.[701,702,724,743]	I	A

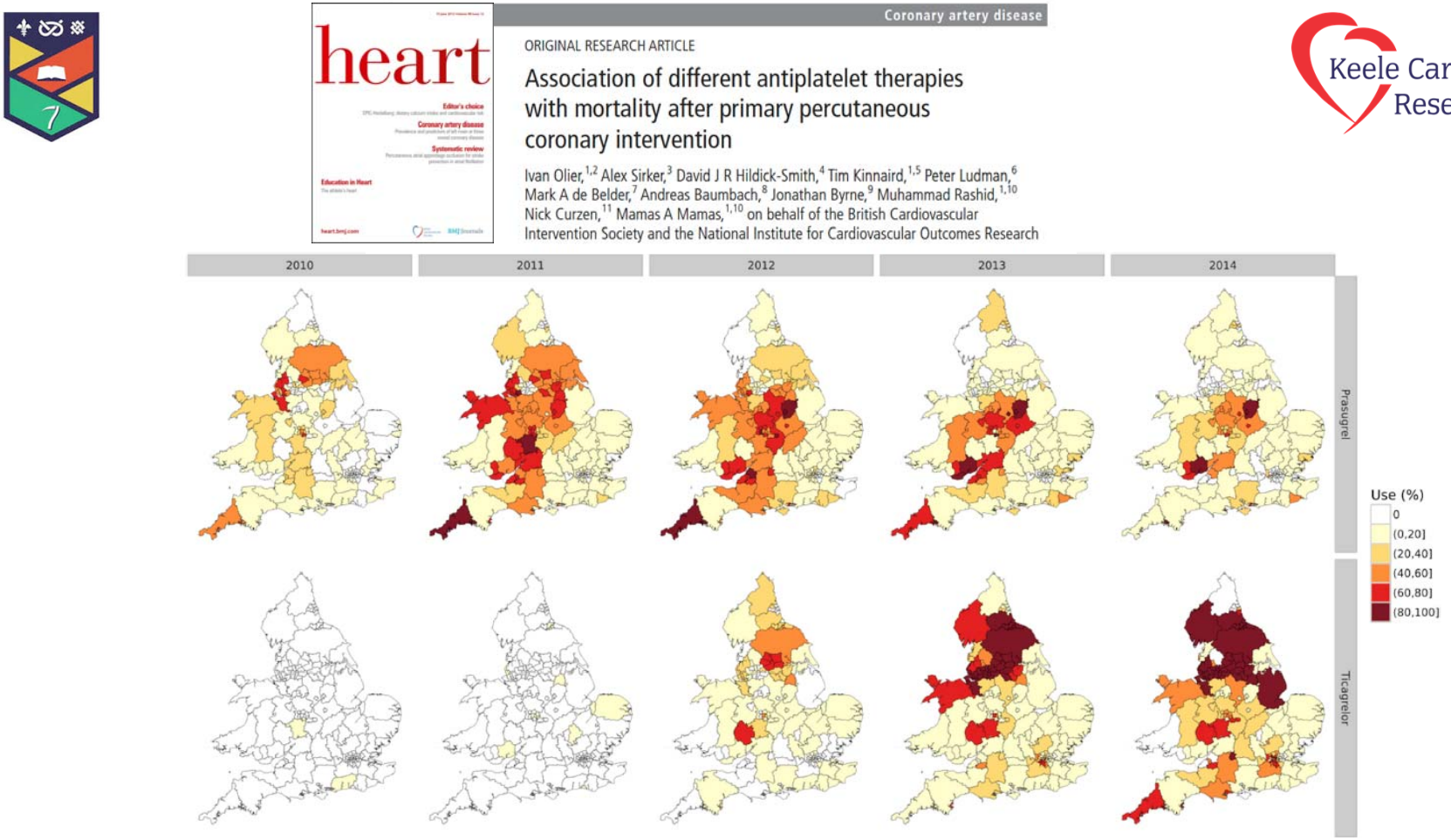


Figure 2 Changes in use of antiplatelet drugs in primary care trusts in England and local health boards in Wales.

Olier et al. Heart 2018; DOI 10.1136/heartjnl-2017-312366

Coronary artery disease

ORIGINAL RESEARCH ARTICLE

Association of different antiplatelet therapies with mortality after primary percutaneous coronary intervention

Ivan Olier,[1,2] Alex Sirker,[3] David J R Hildick-Smith,[4] Tim Kinnaird,[1,5] Peter Ludman,[6] Mark A de Belder,[7] Andreas Baumbach,[8] Jonathan Byrne,[9] Muhammad Rashid,[1,10] Nick Curzen,[11] Mamas A Mamas,[1,10] on behalf of the British Cardiovascular Intervention Society and the National Institute for Cardiovascular Outcomes Research

Keele Cardiovascular Research Group

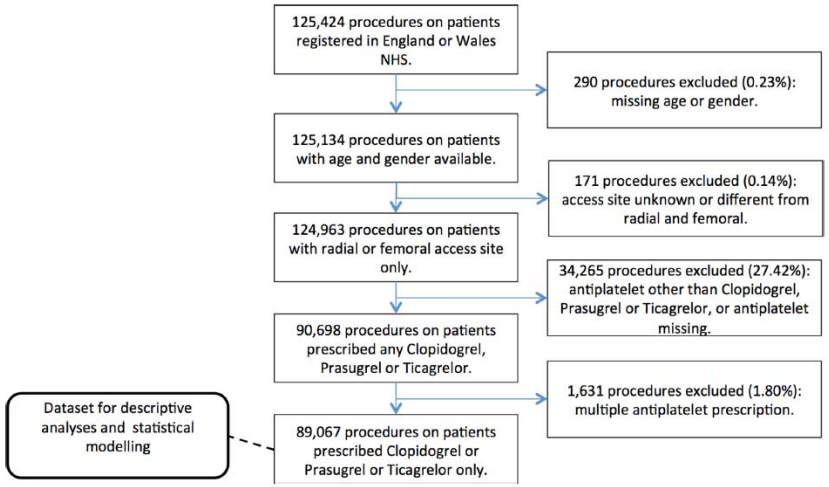
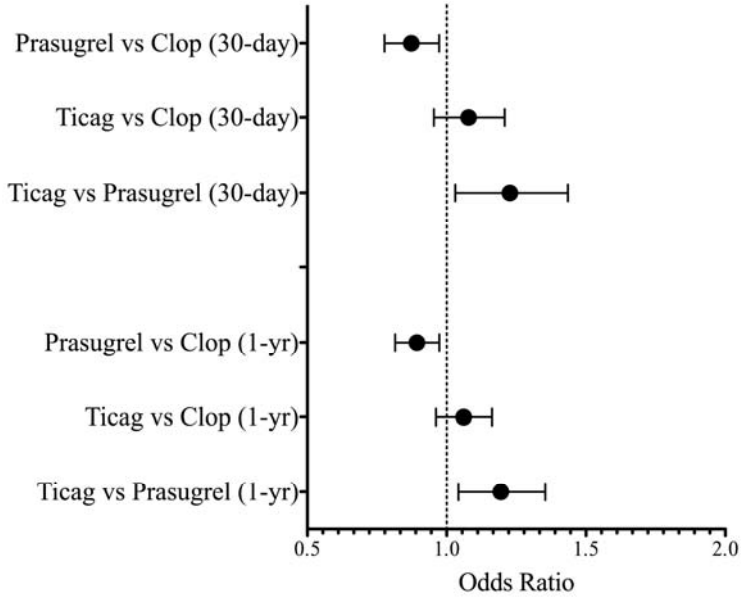
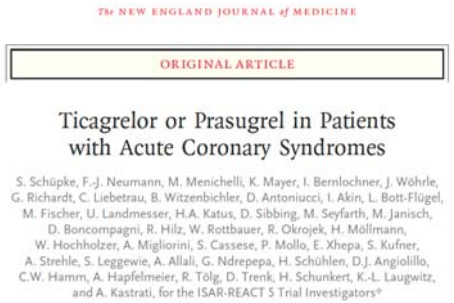


Figure 1 Flow chart for procedure inclusion/exclusion. NHS, National Health Service.



Olier et al. Heart 2018; DOI 10.1136/heartjnl-2017-312366



Keele Cardiovascular Research Group

Trial

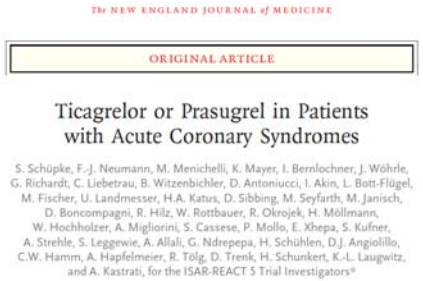
- Randomized controlled, multi-centre trial in patients in whom invasive management planned, randomized to receive Ticagrelor or Prasugrel

Primary Endpoint

- Composite of death, myocardial infarction or stroke at 12 months

Secondary Endpoints

- BARC 3-5 Bleeding (safety endpoint)
- Individual components of primary endpoint
- Stent thrombosis



Major Inclusion Criteria

- Hospitalization for an acute coronary syndrome with planned invasive strategy

Major Exclusion Criteria

- Active bleeding
- Need for oral anticoagulation
- History of stroke or TIA
- Renal insufficiency requiring dialysis
- Moderate or severe hepatic dysfunction
- Concomitant therapy with strong CYP3A4 inhibitors, strong CYP3A inducers, CYP3A substrates with narrow therapeutic indices

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Ticagrelor or Prasugrel in Patients with Acute Coronary Syndromes

S. Schüpke, F.-J. Neumann, M. Menichelli, K. Mayer, I. Bernlochner, J. Wöhrle, G. Richardt, C. Liebetrau, B. Witzenbichler, D. Antoniucci, I. Akin, L. Bott-Flügel, M. Fischer, U. Landmesser, H.A. Katus, D. Sibbing, M. Seyfarth, M. Janisch, D. Boncompagni, R. Hilz, W. Rottbauer, R. Okrojek, H. Möllmann, W. Hochholzer, A. Migliorini, S. Cassese, P. Mollo, E. Xhepa, S. Kufner, A. Strehle, S. Leggewie, A. Allali, G. Ndrepepa, H. Schühlen, D.J. Angiolillo, C.W. Hamm, A. Hapfelmeier, R. Tölg, D. Trenk, H. Schunkert, K.-L. Laugwitz, and A. Kastrati, for the ISAR-REACT 5 Trial Investigators*

Protocol

STEMI

Randomization

Ticagrelor
180 mg loading

Prasugrel
60 mg loading

Angiography + PCI

Ticagrelor
90 mg 1-0-1

Prasugrel
10 mg 1-0-0*

Duration of ADP receptor therapy: 12 months
Concomitant ASA: 75-150 mg/d
In patients with known coronary anatomy
* Prasugrel 5 mg in patients ≥ 75 years of age or weight < 60 kg

Unstable Angina, NSTEMI

Randomization

Ticagrelor
180 mg loading

Prasugrel#
60 mg loading

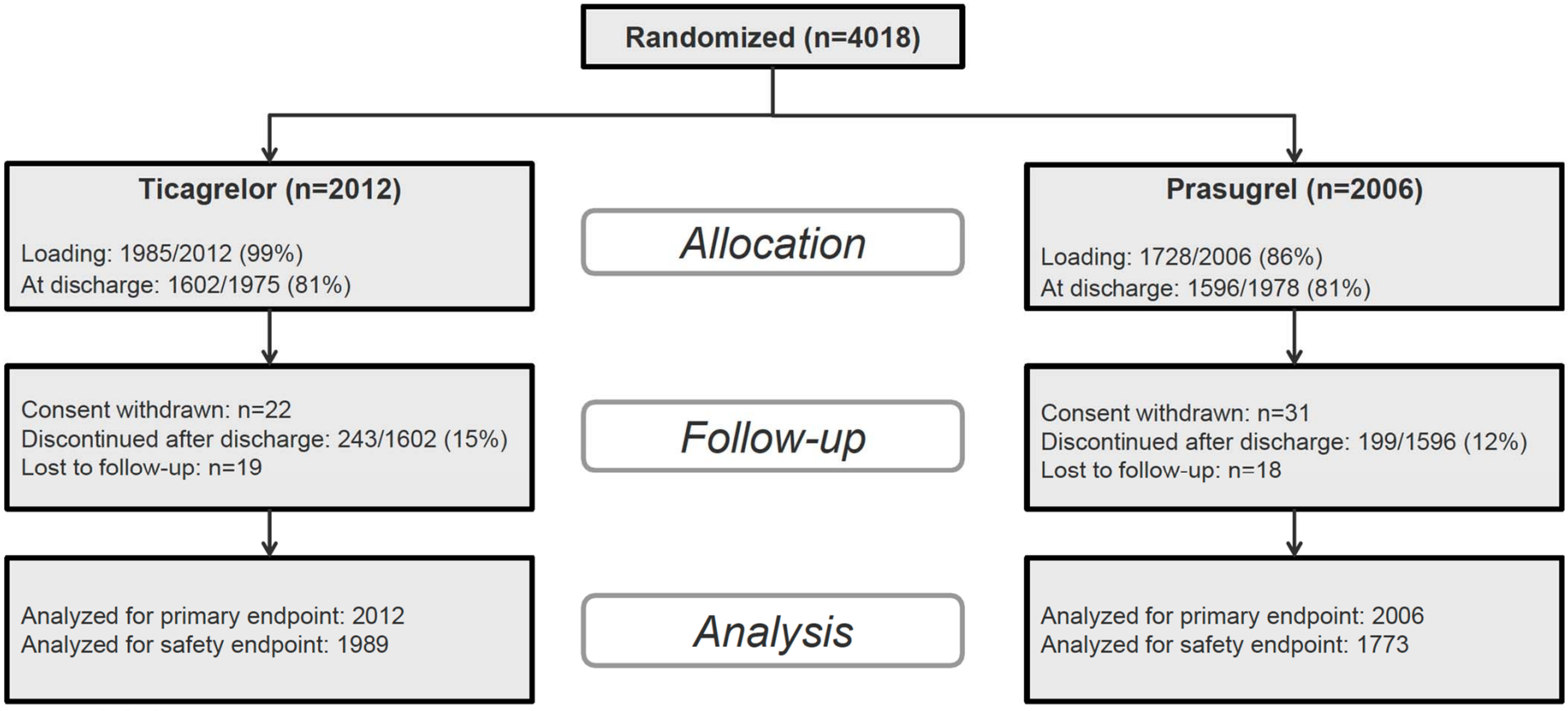
Angiography

Prasugrel
60 mg loading

PCI

Ticagrelor
90 mg 1-0-1

Prasugrel
10 mg 1-0-0*


Randomized (n=4018)
Ticagrelor (n=2012)
Loading: 1985/2012 (99%)
At discharge: 1602/1975 (81%)
Prasugrel (n=2006)
Loading: 1728/2006 (86%)
At discharge: 1596/1978 (81%)
Allocation
Consent withdrawn: n=22
Discontinued after discharge: 243/1602 (15%)
Lost to follow-up: n=19
Consent withdrawn: n=31
Discontinued after discharge: 199/1596 (12%)
Lost to follow-up: n=18
Follow-up
Analyzed for primary endpoint: 2012
Analyzed for safety endpoint: 1989
Analyzed for primary endpoint: 2006
Analyzed for safety endpoint: 1773
Analysis

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Ticagrelor or Prasugrel in Patients with Acute Coronary Syndromes

S. Schüpke, F.-J. Neumann, M. Menichelli, K. Mayer, I. Bernlochner, J. Wöhrle, G. Richardt, C. Liebetrau, B. Witzenbichler, D. Antoniucci, I. Akin, L. Bott-Flügel, M. Fischer, U. Landmesser, H.A. Katus, O. Sibbing, M. Seyfarth, M. Janisch, D. Boncompagni, R. Hilz, W. Rottbauer, R. Okrojek, H. Möllmann, W. Hochholzer, A. Migliorini, S. Cassese, P. Mollo, E. Xhepa, S. Kufner, A. Strehle, S. Leggewie, A. Allali, G. Ndrepepa, H. Schühlen, D.J. Angiolillo, C.W. Hamm, A. Hapfelmeier, R. Tölg, D. Trenk, H. Schunkert, K.-L. Laugwitz, and A. Kastrati, for the ISAR-REACT 5 Trial Investigators*

Table 1. Characteristics of the Patients at Baseline.*

Characteristic	Ticagrelor Group (N=2012)	Prasugrel Group (N=2006)
Age — yr	64.5±12.0	64.6±12.1
Female sex — no. (%)	478 (23.8)	478 (23.8)
Cardiovascular risk factors — no./total no. (%)		
Diabetes	463/2011 (23.0)	429/2005 (21.4)
Use of insulin for diabetes	143/2011 (7.1)	137/2005 (6.8)
Current smoker	682/2002 (34.1)	667/1999 (33.4)
Arterial hypertension	1432/2008 (71.3)	1384/2003 (69.1)
Hypercholesterolemia	1178/2007 (58.7)	1163/2003 (58.1)
Medical history — no./total no. (%)		
Myocardial infarction	311/2010 (15.5)	320/2005 (16.0)
PCI	453/2011 (22.5)	463/2004 (23.1)
Aortocoronary bypass surgery	115/2011 (5.7)	130/2005 (6.5)
Cardiogenic shock — no. (%)	31 (1.5)	34 (1.7)
Blood pressure — mm Hg		
Systolic†	144±25	143±24
Diastolic‡	82±15	82±14
Heart rate — beats/min§	77±16	76±16
BMI¶	27.8±4.6	27.8±4.4
Weight <60 kg — no./total no. (%)	108/2003 (5.4)	94/1988 (4.7)
Creatinine level — μmol/liter‖	88±27	88±31
Diagnosis at admission — no. (%)		
Unstable angina	249 (12.4)	261 (13.0)
NSTEMI	930 (46.2)	925 (46.1)
STEMI	833 (41.4)	820 (40.9)
Treatment strategy — no./total no. (%)**		
PCI	1676/2009 (83.4)	1701/2005 (84.8)
CABG	47/2009 (2.3)	36/2005 (1.8)
Conservative therapy	285/2009 (14.2)	268/2005 (13.4)
Other††	1/2009 (<0.1)	0

- 41% patients STEMI, 46% NSTEMI
- > 99.5% of patients received coronary angiography
- 84% of patients underwent PCI, 2% CABG and 14% medically managed

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Ticagrelor or Prasugrel in Patients with Acute Coronary Syndromes

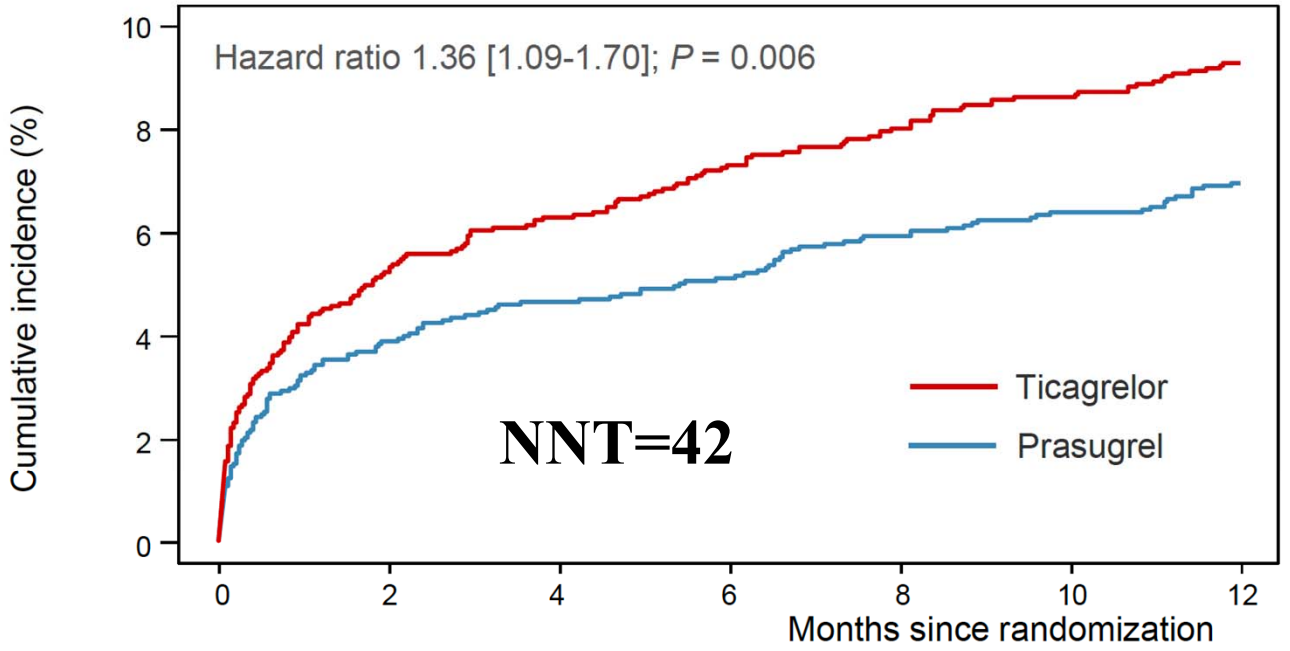
S. Schüpke, F.-J. Neumann, M. Menichelli, K. Mayer, I. Bernlochner, J. Wöhrle, G. Richardt, C. Liebetrau, B. Witzenbichler, D. Antoniucci, I. Akin, L. Bott-Flügel, M. Fischer, U. Landmesser, H.A. Katus, O. Sibbing, M. Seyfarth, M. Janisch, D. Boncompagni, R. Hilz, W. Rottbauer, R. Okrojek, H. Möllmann, W. Hochholzer, A. Migliorini, S. Cassese, P. Mollo, E. Xhepa, S. Kufner, A. Strehle, S. Leggewie, A. Allali, G. Ndrepepa, H. Schühlen, D.J. Angiolillo, C.W. Hamm, A. Hapfelmeier, R. Tölg, D. Trenk, H. Schunkert, K.-L. Laugwitz, and A. Kastrati, for the ISAR-REACT 5 Trial Investigators*

Table S3. Diagnosis and Drug Therapy at Discharge

Characteristics	Ticagrelor (N = 2012)	Prasugrel (N = 2006)
Final diagnosis of acute coronary syndrome – no. (%)*	1830/2006 (91.2)	1813/2004 (90.5)
– unstable angina	189/1830 (10.3)	173/1813 (9.5)
– Non-ST-segment elevation MI	834/1830 (45.6)	827/1813 (45.6)
– ST-segment elevation MI	807/1830 (44.1)	813/1813 (44.8)
Therapy at discharge – no. (%)†		
– Aspirin	1866/1975 (94.5)	1878/1978 (94.9)
– Ticagrelor	1602/1975 (81.1)	14/1978 (0.7)
– Prasugrel	21/1975 (1.1)	1596/1978 (80.7)
– Clopidogrel	90/1975 (4.6)	117/1978 (5.9)
– Oral anticoagulant drugs	82/1975 (4.2)	100/1978 (5.1)

Primary End point
(Composite of Death, MI, or Stroke)

Keele Cardiovascular Research Group

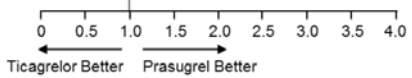


No. at Risk							
Ticagrelor	2012	1877	1857	1835	1815	1801	1772
Prasugrel	2006	1892	1877	1862	1839	1829	1803

Primary End point
(Composite of Death, MI, or Stroke)

Keele Cardiovascular Research Group

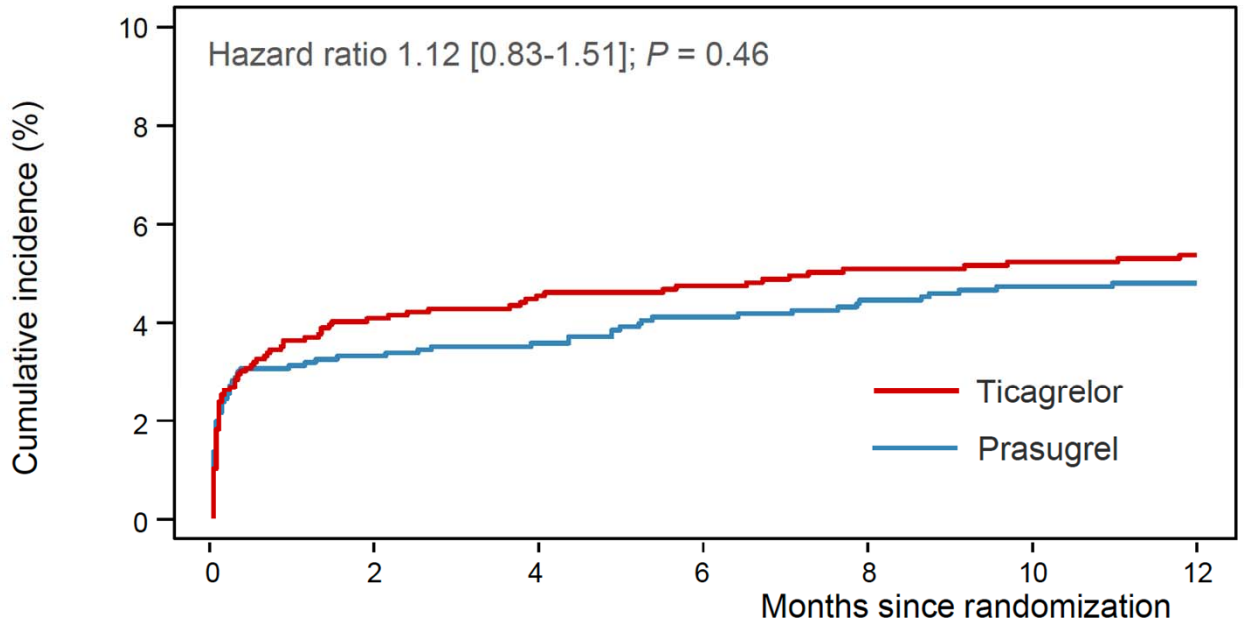
Subgroup	Ticagrelor	Prasugrel	Hazard Ratio (95% CI)
	no. of patients with event/total no. of patients (%)		
Overall	184/2012 (9.3)	137/2006 (6.9)	1.36 (1.09-1.70)
Age			
≥75 years	74/490 (15.3)	66/492 (13.7)	1.19 (0.85-1.66)
<75 years	110/1522 (7.3)	71/1514 (4.8)	1.55 (1.15-2.09)
Sex			
Female	42/478 (8.9)	39/478 (8.3)	1.10 (0.71-1.70)
Male	142/1534 (9.4)	98/1528 (6.5)	1.47 (1.13-1.90)
Smoking status			
Active	47/682 (7)	41/667 (6.2)	1.15 (0.76-1.75)
Non-active	133/1320 (10.2)	94/1332 (7.2)	1.44 (1.10-1.87)
Weight			
<60 kg	13/108 (12.2)	10/94 (10.7)	1.18 (0.52-2.71)
≥60 kg	171/1895 (9.1)	124/1894 (6.4)	1.40 (1.11-1.77)
Diabetes mellitus			
Yes	51/463 (11.2)	55/429 (13)	0.84 (0.58-1.24)
No	132/1548 (8.6)	81/1576 (5.2)	1.70 (1.29-2.24)
Creatinine			
≥83.1 µmol/L	125/1005 (12.6)	88/1009 (8.8)	1.46 (1.11-1.92)
<83.1 µmol/L	59/1002 (6)	49/996 (5)	1.21 (0.83-1.76)
Cardiogenic Shock			
Yes	19/31 (62.6)	18/34 (52.9)	1.29 (0.67-2.47)
No	165/1981 (8.4)	119/1972 (6.1)	1.40 (1.11-1.78)
Clinical Presentation			
STEMI	83/833 (10.1)	64/820 (7.9)	1.31 (0.94-1.81)
NSTEMI	81/930 (8.8)	60/925 (6.6)	1.36 (0.97-1.90)
Unstable Angina	20/249 (8.2)	13/261 (5.1)	1.62 (0.81-3.26)
Treatment Strategy			
PCI	162/1676 (9.8)	120/1701 (7.1)	1.41 (1.11-1.78)
Conservative	17/285 (6.1)	12/268 (4.6)	1.29 (0.62-2.70)
CABG	5/47 (10.6)	5/36 (13.9)	0.66 (0.19-2.30)



BARC Type 3-5 Bleeding

(Safety End point)

Keele Cardiovascular Research Group



No. at Risk							
Ticagrelor	1989	1441	1399	1356	1319	1296	1266
Prasugrel	1773	1465	1427	1397	1357	1333	1307

Table 2. Clinical End Points.*

End Point	Ticagrelor Group (N=2012)	Prasugrel Group (N=2006)	Hazard Ratio (95% CI)	P Value
Primary end point: death, myocardial infarction, or stroke — no. (%)	184 (9.3)	137 (6.9)	1.36 (1.09–1.70)	0.006
Death — no. (%)				
From any cause	90 (4.5)	73 (3.7)	1.23 (0.91–1.68)	
From cardiovascular cause	63 (3.2)	59 (3.0)		
From noncardiovascular cause	27 (1.4)	14 (0.7)		
Myocardial infarction — no. (%)†	96 (4.8)	60 (3.0)	1.63 (1.18–2.25)	
Type 1 — no.	52	35		
Type 2 — no.	4	3		
Type 4a — no.	19	11		
Type 4b — no.	20	11		
Type 5 — no.	1	0		
STEMI — no.	31	14		
Stroke				
Any — no. (%)	22 (1.1)	19 (1.0)	1.17 (0.63–2.15)	
Ischemic — no.	16	17		
Hemorrhagic — no.	6	2		
Definite or probable stent thrombosis — no. (%)	26 (1.3)	20 (1.0)	1.30 (0.72–2.33)	
Definite stent thrombosis — no. (%)	22 (1.1)	12 (0.6)		
Secondary safety end point: BARC type 3, 4, or 5 bleeding — no./total no. (%)‡	95/1989 (5.4)	80/1773 (4.8)	1.12 (0.83–1.51)	0.46
BARC 3a	47	41		
BARC 3b	32	31		
BARC 3c	4	2		
BARC 4	8	2		
BARC 5a	1	0		
BARC 5b	3	4		

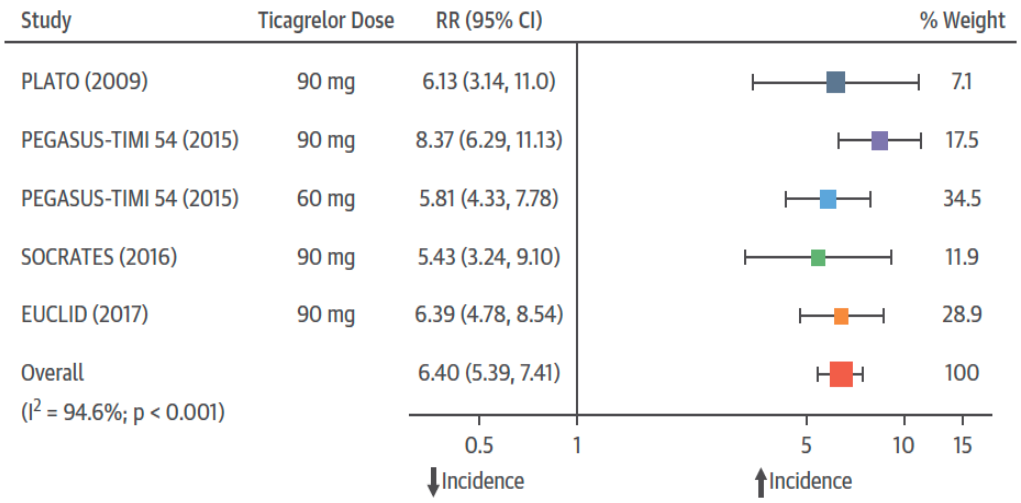
Keele Cardiovascular Research Group

Premature Ticagrelor Discontinuation in Secondary Prevention of Atherosclerotic CVD

JACC Review Topic of the Week

Sameer Arora, MD,[a,*] Kamal Shemisa, MD,[b,*] Muthiah Vaduganathan, MD, MPH,[c] Arman Qamar, MD,[c] Ankur Gupta, MD, PhD,[b] Sushil K. Garg, MD,[d] Dharam J. Kumbhani, MD, SM,[b] Helen Mayo, MLS,[e] Houman Khalili, MD,[f] Ambarish Pandey, MD, MSCS,[b] Sandeep R. Das, MD, MPH, MBA[f]

FIGURE 2 Dyspnea-Related Discontinuation Risk for Ticagrelor Versus Comparator



ISAR REACT 5: Greater discontinuation of Ticagrelor (15%) vs Prasugrel (12%) P<0.05, median time to discontinuation 84 days (Ticagralor vs 102 days (Prasugrel)

Ticagrelor or Prasugrel in Acute Coronary Syndromes — The Winner Takes It All?

Hani Jneid, M.D.

Suggested algorithm from NEJM editorial

Keele Cardiovascular Research Group

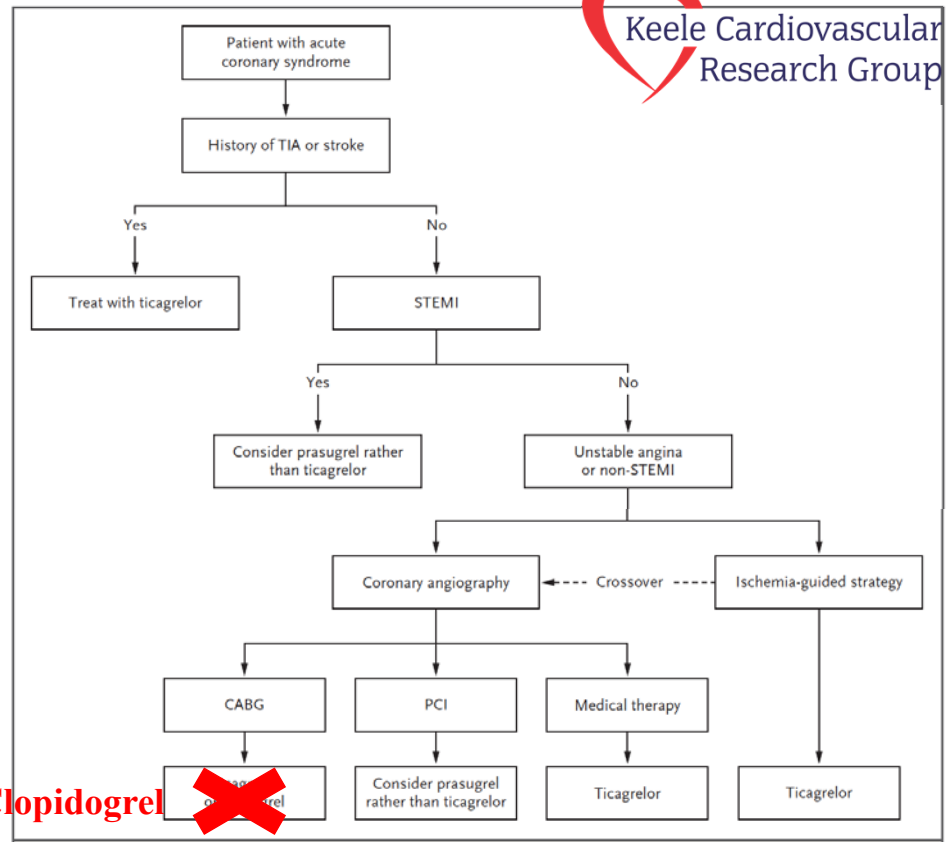


Figure 1. Proposed Algorithm for the Choice of an Oral $P2Y_{12}$ Receptor Inhibitor for Patients with an Acute Coronary Syndrome.

An ischemia-guided strategy involves an initial medical strategy with angiography reserved for patients who have evidence of recurrent ischemic symptoms or failed medical therapy, clinical indicators of high prognostic risk, or objective evidence of clinically significant ischemia. CABG denotes coronary-artery bypass grafting, PCI percutaneous coronary intervention, STEMI ST-segment elevation myocardial infarction, and TIA transient ischemic attack.

Summary

- RCTs show superiority of Prasugrel and Ticagrelor to Clopidogrel
- ISAR-REACT 5 RCT in ACS demonstrates superior outcomes of Prasugrel in ACS patients with a planned invasive management
- Superiority mainly driven be decreased risk of type 1 AMI and stent thrombosis
- Landmark trial providing insight into optimal anti-platelet therapy in patients treated with planned invasive strategy
- Advances personalization of antiplatelet therapy in ACS