Stent Selection for Primary Angioplasty and Outcomes in the Era of Potent Antiplatelets. Data from the Multicenter Randomized Prague-18 trial.

O. Hlinomaz, Z. Motovska, J. Knot on behalf of the PRAGUE-18 Investigators

ICRC, Dpt. Cardioangiology, St. Anne University Hospital, Masaryk University School of Medicine, Brno
CINRE s.r.o., Bratislava
Univmed s.r.o., Brno

Introduction

The current generation of **drug-eluting stents (DES)** has been shown to be superior to **bare-metal stents (BMS)** in reducing the risk of recurrent myocardial infarction (MI), stent thrombosis, and target lesion revascularization.

However, the use of **bioresorbable vascular scaffolds (BVS)** has been hypothesized to overcome the limitations of DES

Task Force on Myocardial Revascularization of the European Society of Cardiology (2018) **recommended that BVS should not be used outside well-controlled clinical studies**

Aims

- **why different types of stents were used in AMI patients** who underwent primary angioplasty
- **how it influenced the prognoses** of the study population.
- The **efficacy and safety outcomes** of the different stent types were also compared in patients treated with **prasugrel vs. ticagrelor**

Circulation

Prasugrel versus Ticagrelor in Patients with Acute Myocardial Infarction Treated with Primary Percutaneous Coronary Intervention: Multicenter Randomized PRAGUE-18 Study

Zuzana Motovska, Ota Hlinomaz, Roman Miklik, Milan Hromadka, Ivo Varvarovsky, Jaroslav Dusek, Jiri Knot, Jiri Jarkovsky, Petr Kala, Richard Rokyta, Frantisek Tousek, Petra Kramarikova, Bohumil Majtan, Stanislav Simek, Marian Branny, Jan Mrozek, Pavel Cervinka, Jiri Ostransky and Petr Widimsky

Circulation. published online August 30, 2016;
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231

Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/early/2016/08/29/CIRCULATIONAHA.116.024823

Data Supplement (unedited) at:
http://circ.ahajournals.org/content/suppl/2016/08/29/CIRCULATIONAHA.116.024823.DC1.html

Circulation. 2016 Nov 22;134(21):1603-1612. doi: 10.1161/CIRCULATIONAHA.116.024823. Epub 2016 Aug 30. PMID: 27576777.

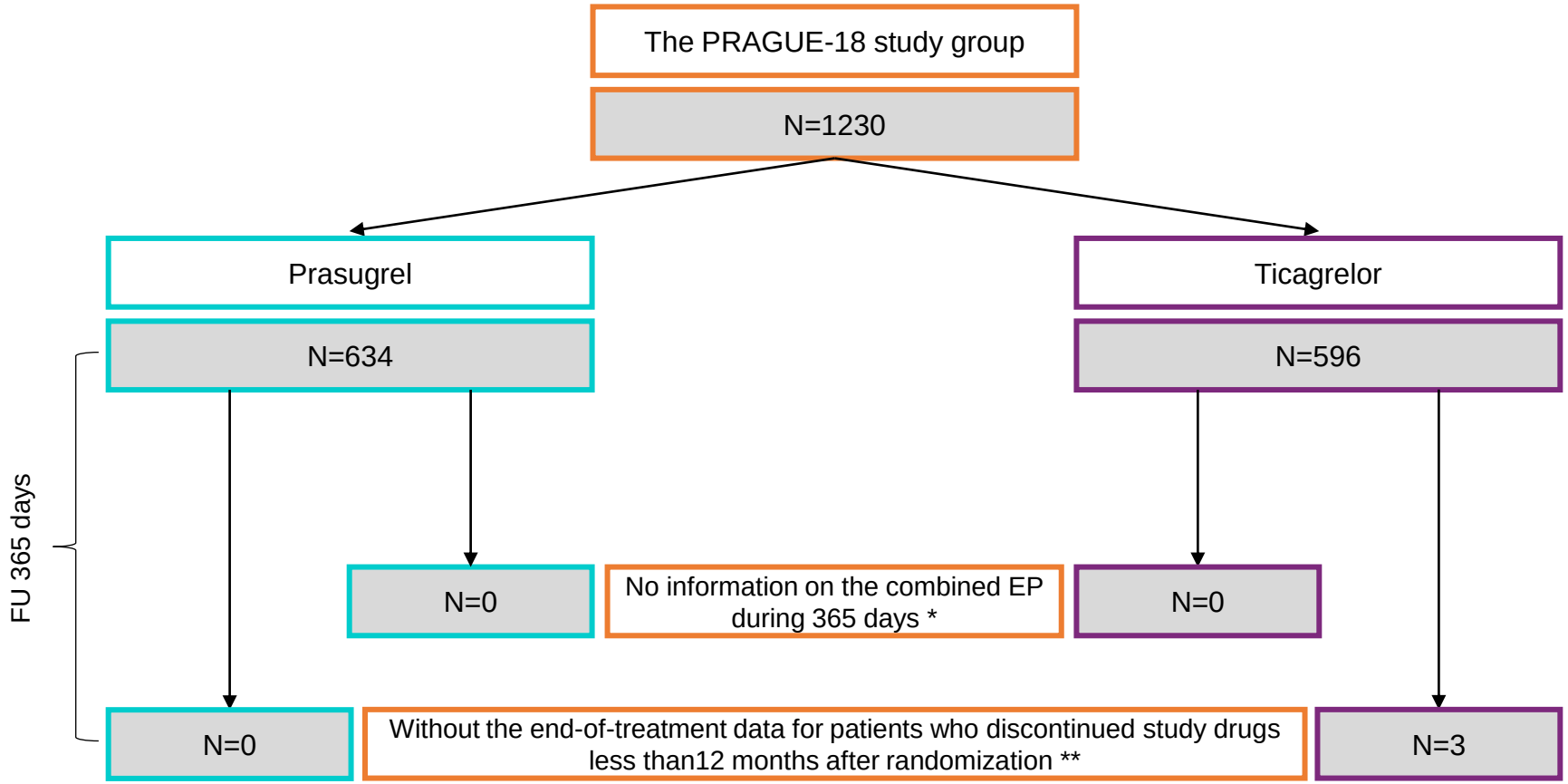
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY VOL. 71, NO. 4, 2018

ORIGINAL INVESTIGATIONS

1-Year Outcomes of Patients Undergoing Primary Angioplasty for Myocardial Infarction Treated With Prasugrel Versus Ticagrelor

Zuzana Motovska, MD, PhD,[a] Ota Hlinomaz, MD, CSc,[b] Petr Kala, MD, PhD,[c] Milan Hromadka, MD, PhD,[d] Jiri Knot, MD, PhD,[a] Ivo Varvarovsky, MD, PhD,[e] Jaroslav Dusek, MD, PhD,[f] Jiri Jarkovsky, MSc, PhD,[g] Roman Miklik, MD, PhD,[c] Richard Rokyta, MD, PhD,[d] Frantisek Tousek, MD,[h] Petra Kramarikova, Mgr,[b] Michal Svoboda, MSc,[g] Bohumil Majtan, MD,[i,j] Stanislav Simek, MD, CSc,[k] Marian Branny, MD, PhD,[l] Jan Mrozek, MD,[m] Pavel Cervinka, MD, PhD,[n] Jiri Ostransky, MD,[o] Petr Widimsky, MD, DrSc,[a] PRAGUE-18 Study Group

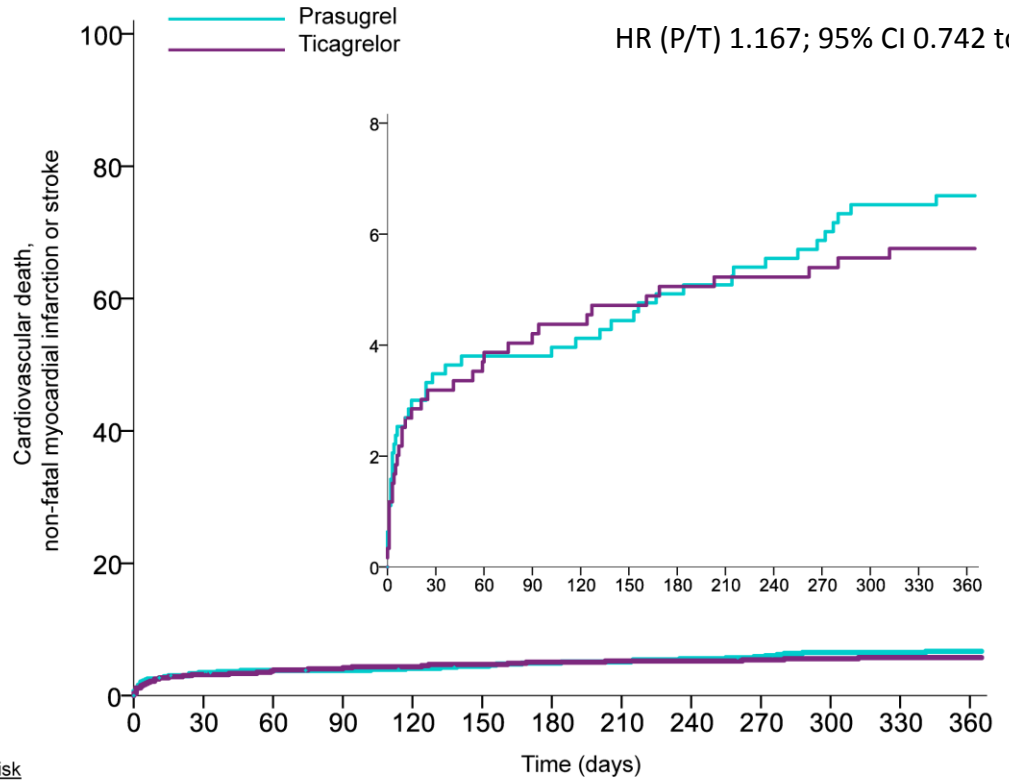
J Am Coll Cardiol. 2018 Jan 30;71(4):371-381. doi: 10.1016/j.jacc.2017.11.008. Epub 2017 Nov 14. PMID: 29154813.



* The combined eficiacy endpoint (EP) = Cardiovascular death, Non-fatal myocardial infarction, Stroke: Missing information in 19 patients were supplemented from national registries of the Institute of Health information and Statistics of the Czech Republic.
** For missing end-of-treatment data in 3 patients, a visit data were added for which treatment discontinuations were reported.

J Am Coll Cardiol. 2018 Jan 30;71(4):371-381. doi: 10.1016/j.jacc.2017.11.008. Epub 2017 Nov 14. PMID: 29154813.

KEY EFFICACY ENDPOINT: CV Death/Non-fatal MI/Stroke



HR (P/T) 1.167; 95% CI 0.742 to 1.835, P=0.503 (Log Rank test)

No at risk

Time (day)	30	60	90	120	150	180	210	240	270	300	330	360
Prasugrel	608	603	602	599	596	593	592	589	586	580	576	550
Ticagrelor	575	568	565	562	559	557	556	556	555	554	552	530

J Am Coll Cardiol. 2018 Jan 30;71(4):371-381. doi: 10.1016/j.jacc.2017.11.008. Epub 2017 Nov 14. PMID: 29154813.

END POINTS

	Prasugrel	Ticagrelor	P-value
CV Death, Non-fatal MI or Stroke	42 (6.6%)	34 (5.7%)	0.503
Death from cardiovascular causes	21 (3.3%)	18 (3.0%)	0.769
Non-fatal myocardial infarction	19 (3.0%)	15 (2.5%)	0.611
Stroke	7 (1.1%)	4 (0.7%)	0.423
Definite stent thrombosis	7 (1.1%)	9 (1.5%)	0.535
Death from any cause	30 (4.7%)	25 (4.2%)	0.654
Bleeding	69 (10.9%)	66 (11.1%)	0.930
TIMI major	6 (0.9%)	4 (0.7%)	0.754
BARC ≥ 3	15 (2.4%)	9 (1.5%)	0.308

J Am Coll Cardiol. 2018 Jan 30;71(4):371-381. doi: 10.1016/j.jacc.2017.11.008. Epub 2017 Nov 14. PMID: 29154813.

		HR (95% CI)	P-value
Risk of ischemic endpoint *	**Economically motivated switch** (N=481)	**0.433 (0.210–0.894)**	**0.024**
	Switch from other reasons (N=178)	**3.420 (1.823–6.415)**	**<0.001**
Risk of bleeding	**Economically motivated switch** (N=481)	**0.416 (0.246–0.701)**	**0.001**

* Cardiovascular death, non-fatal myocardial infarction or stroke.

The hazard ratio was based on the Cox proportional hazard model with time dependent covariates

J Am Coll Cardiol. 2018 Jan 30;71(4):371-381. doi: 10.1016/j.jacc.2017.11.008. Epub 2017 Nov 14. PMID: 29154813.

CONCLUSIONS

1) Prasugrel and Ticagrelor are similarly effective and safe during the first year after MI

1) Economically motivated, early post-discharge switch to clopidogrel, when approved by treating physicians, was not associated with increased risk of ischemic events

Methods

PRAGUE-18 study:

- 14 sites in the Czech Republic
- Between April 2013 – May 2016
- 1230 patients enrolled

Stents Implanted - 1151

Excluded (more than one type of stent) - 40

Analyzed - 1111

DES Implanted – 749 (67.4%)

BMS Implanted – 296 (26.6%)

BVS Implanted – 66 (5.9%)

Baseline Characteristics

			Stent		*p*-Value
		DES (*n* = 749)	BMS (*n* = 296)	BVS (*n* = 66)	
Basic characteristics					
Gender—male		574 (76.6%)	223 (75.3%)	45 (68.2%)	0.292
Age		61.7 (42.9; 78.1)	62.7 (46.7; 81.5)	56.9 (40.8; 71.9)	<0.001
BMI		27.8 (22.3; 36.1)	28.3 (22.7; 36.3)	26.4 (21.2; 35.9)	0.022
Laboratory results					
Urea		5.2 (3.1; 9.0)	5.4 (3.4; 9.7)	4.9 (2.7; 8.4)	0.011
Creatinine		82.0 (55.0; 124.0)	85.0 (54.0; 136.0)	73.0 (47.0; 106.0)	<0.001
Risk factors and comorbidities					
Obesity		155 (20.7%)	53 (17.9%)	6 (9.1%)	0.05
Smoking		485 (64.8%)	179 (60.5%)	52 (78.8%)	0.016
Killip class	1	667 (89.1%)	253 (85.5%)	64 (97.0%)	0.041
	2	50 (6.7%)	19 (6.4%)	2 (3.0%)	
	3	11 (1.5%)	4 (1.4%)	0 (0.0%)	
	4	21 (2.8%)	20 (6.8%)	0 (0.0%)	
Coronarography and primary PCI					
Left main stenosis ≥50%	Yes	17 (50.0%)	16 (47.1%)	1 (2.9%)	0.036
Left main stenosis as culprit lesion	Yes	4 (36.4%)	7 (63.6%)	0 (0.0%)	0.035
LAD	Yes	332 (74.3%)	86 (19.2%)	29 (6.5%)	<0.001
RCA	Yes	288 (62.9%)	142 (31.0%)	28 (6.1%)	0.018

pPCI -primary PCI, LAD—left anterior descending artery, LCx—left circumflex artery, OM—obtuse marginal artery, RCA—right coronary artery.
Fisher's exact test and Kruskal-Wallis test.

Endpoint Occurrence in Relation to Stent Type

Primary net-clinical endpoint (i.e., death, nonfatal MI, stroke, major bleeding, and revascularization)
(DES vs BMS; DES vs BVS)

	Stent			*p*-Value	BMS *		BVS *	
	DES	BMS	BVS		HR (95% CI)	*p*	HR (95% CI)	*p*
7 days								
Primary endpoint	19 (2.5%)	19 (6.3%)	2 (3.0%)	**0.011**	2.70 (1.42–5.15)	**0.002**	1.25 (0.29–5.39)	0.763
30 days								
CV death	12 (1.6%)	9 (3.0%)	1 (1.5%)	0.303	1.92 (0.80–4.55)	0.139	0.94 (0.12–7.23)	0.953
Re-MI	9 (1.2%)	3 (1.0%)	1 (1.5%)	0.791	0.85 (0.23–3.14)	0.808	1.26 (0.16–10.01)	0.822
Stroke	2 (0.3%)	1 (0.3%)	0 (0.0%)	0.999	1.27 (0.11–14.10)	0.841	–	–
CV death/Re-MI/Stroke	19 (2.5%)	13 (4.4%)	2 (3.0%)	0.281	1.75 (0.86–3.55)	0.119	1.20 (0.27–5.15)	0.807
Death	14 (1.9%)	12 (4.1%)	1 (1.5%)	0.101	2.20 (1.02–4.76)	**0.045**	0.81 (0.11–6.13)	0.835
Stent thrombosis	6 (0.8%)	2 (0.7%)	1 (1.5%)	0.587	0.84 (0.17–4.19)	0.838	1.89 (0.22–15.75)	0.553
Bleeding	40 (5.3%)	24 (8.1%)	3 (4.5%)	0.218	1.57 (0.94–2.61)	0.079	0.85 (0.26–2.77)	0.799
TIMI—severe	3 (0.4%)	4 (1.4%)	0 (0.0%)	0.232	3.43 (0.76–15.33)	0.106	–	–
BARC—severe	7 (0.9%)	6 (2.0%)	0 (0.0%)	0.346	2.21 (0.74–6.58)	0.154	–	–

Cox proportional risk model

Endpoint Occurrence in Relation to Stent Type

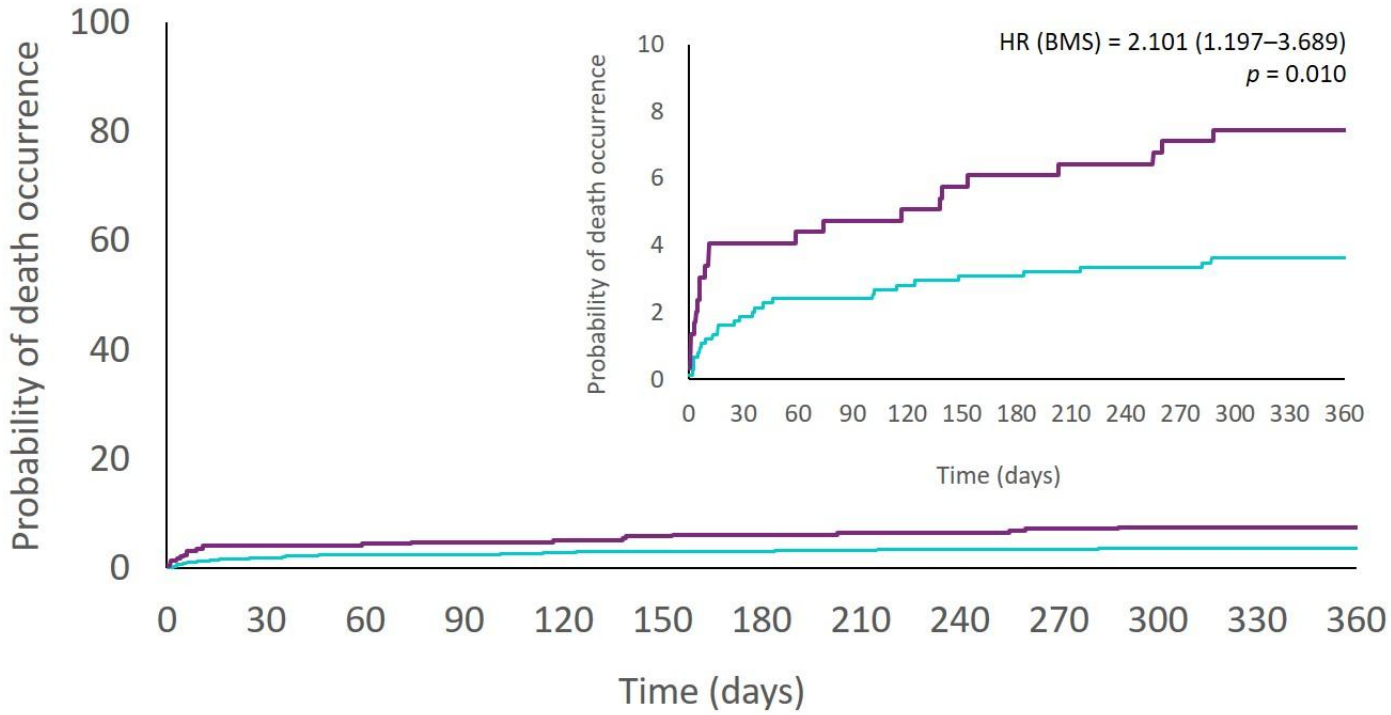
Primary net-clinical endpoint (i.e., death, nonfatal MI, stroke, major bleeding, and revascularization)
(DES vs BMS; DES vs BVS)

	Stent			*p*-Value	BMS *		BVS *	
	DES	BMS	BVS		HR (95% CI)	*p*	HR (95% CI)	*p*
365 days								
CV death	20 (2.7%)	15 (5.1%)	1 (1.5%)	0.119	1.93 (0.98–3.76)	0.054	0.56 (0.07–4.18)	0.573
Re-MI	20 (2.7%)	8 (2.7%)	1 (1.5%)	0.999	1.03 (0.45–2.34)	0.935	0.56 (0.07–4.19)	0.575
Stroke	6 (0.8%)	3 (1.0%)	1 (1.5%)	0.523	1.29 (0.32–5.18)	0.713	1.85 (0.22–15.42)	0.566
CV death/Re-MI/Stroke	39 (5.2%)	25 (8.4%)	3 (4.5%)	0.150	1.66 (1.01–2.74)	0.047	0.86 (0.26–2.80)	0.810
Death	27 (3.6%)	22 (7.4%)	1 (1.5%)	0.018	2.10 (1.19-3.69)	0.010	0.41 (0.05–3.05)	0.388
Stent thrombosis	10 (1.3%)	3 (1.0%)	1 (1.5%)	0.812	0.77 (0.21–2.79)	0.690	1.13 (0.14–8.82)	0.907
Bleeding	78 (10.4%)	32 (10.8%)	10 (15.2%)	0.461	1.08 (0.71–1.62)	0.715	1.45 (0.75–2.80)	0.268
TIMI—severe	4 (0.5%)	4 (1.4%)	2 (3.0%)	0.051	2.58 (0.64–10.32)	0.180	5.63 (1.03–30.73)	0.046
BARC—severe	12 (1.6%)	6 (2.0%)	2 (3.0%)	0.453	1.29 (0.48–3.44)	0.609	1.87 (0.41–8.36)	0.412

Cox proportional risk model

Secondary Endpoint Occurrence in Relation to Stent Type

Secondary clinical endpoint (death rate)



			30	180	365
DES		Number of patients at risk	734	721	634
		Probability of death (95% CI)	1.9 (0.9; 2.8)	3.1 (1.8; 4.3)	3.6 (2.3; 5.0)
BMS		Number of patients at risk	284	277	245
		Probability of death (95% CI)	4.1 (1.8; 6.3)	6.1 (3.4; 8.8)	7.4 (4.5; 10.4)

Kaplan-Meier curves of cumulative incidence of death during 365 days in DES and BMS group.

Endpoint Occurrence in Relation to Stent Type in Patients Treated with Prasugrel vs. Ticagrelor

	Stent			*p*-Value	BMS *		BVS *	
	DES	BMS	BVS		HR (95% CI)	*p*	HR (95% CI)	*p*
Patients Randomized to Prasugrel								
7 days								
Primary Endpoint	10 (2.6%)	9 (6.3%)	2 (4.7%)	0.104	2.74 (1.09–6.92)	0.032	1.98 (0.42–9.19)	0.380
30 days								
CV death	6 (1.6%)	5 (3.5%)	0 (0.0%)	0.280	2.30 (0.70–7.55)	0.167	–	–
Re-MI	5 (1.3%)	1 (0.7%)	1 (2.3%)	0.649	0.54 (0.06–4.68)	0.583	1.81(0.21–15.55)	0.586
Stroke	2 (0.5%)	1 (0.7%)	0 (0.0%)	0.999	1.38 (0.12–15.22)	0.792	–	–
CV death/Re-MI/Stroke	11 (2.8%)	7 (4.9%)	1 (2.3%)	0.427	1.75 (0.67–4.51)	0.246	0.82 (0.10–6.39)	0.854
Death	7 (1.8%)	6 (4.2%)	0 (0.0%)	0.203	2.37 (0.79–7.07)	0.120	–	–
In stent thrombosis	2 (0.5%)	1 (0.7%)	1 (2.3%)	0.314	1.36 (0.12–15.08)	0.798	4.53(0.41–50.05)	0.217
Bleeding	23 (5.9%)	10 (7.0%)	3 (7.0%)	0.810	1.22 (0.58–2.56)	0.597	1.20 (0.36–4.00)	0.763
TIMI—severe	2 (0.5%)	2 (1.4%)	0 (0.0%)	0.483	2.77 (0.39–19.73)	0.307	–	–
BARC—severe	5 (1.3%)	2 (1.4%)	0 (0.0%)	0.999	1.11 (0.21–5.73)	0.898	–	–

Fisher's exact test and Cox proportional risk model

Endpoint Occurrence in Relation to Stent Type in Patients Treated with Prasugrel vs. Ticagrelor

	Stent			*p*-Value	BMS *		BVS *	
	DES	BMS	BVS		HR (95% CI)	*p*	HR (95% CI)	*p*
Patients Randomized to Prasugrel								
365 days (biased by high switch rate to clopidogrel)								
CV death	11 (2.8%)	9 (6.3%)	0 (0.0%)	0.081	2.28 (0.94–5.51)	0.066	–	–
Re-MI	12 (3.1%)	3 (2.1%)	1 (2.3%)	0.913	0.69 (0.19–2.46)	0.575	0.74 (0.09–5.70)	0.774
Stroke	4 (1.0%)	2 (1.4%)	1 (2.3%)	0.425	1.40 (0.25–7.67)	0.694	2.19 (0.24–19.59)	0.483
CV death/Re-MI/Stroke	23 (5.9%)	13 (9.2%)	2 (4.7%)	0.398	1.58 (0.80–3.12)	0.186	0.77 (0.18–3.28)	0.728
Death	15 (3.9%)	13 (9.2%)	0 (0.0%)	0.018	2.42 (1.15–5.09)	**0.019**	–	–
In stent thrombosis	4 (1.0%)	2 (1.4%)	1 (2.3%)	0.425	1.39 (0.25–7.63)	0.699	2.23 (0.25–20.02)	0.471
Bleeding	40 (10.3%)	12 (8.5%)	9 (20.9%)	0.075	0.84 (0.44–1.61)	0.611	2.069 (1.00–4.26)	**0.049**
TIMI—severe	2 (0.5%)	2 (1.4%)	2 (4.7%)	0.035	2.80 (0.39–19.88)	0.303	8.90 (1.25–63.18)	**0.029**
BARC—severe	7 (1.8%)	2 (1.4%)	2 (4.7%)	0.325	0.79 (0.16–3.83)	0.777	2.52 (0.52–12.15)	0.248

Fisher's exact test and Cox proportional risk model

Endpoint Occurrence in Relation to Stent Type in Patients Treated with Prasugrel vs. Ticagrelor

	Stent			*p*-Value	BMS *		BVS *	
	DES	BMS	BVS		HR (95% CI)	*p*	HR (95% CI)	*p*
Patients Randomized to Ticagrelor								
7 days								
Primary Endpoint	9 (2.5%)	10 (6.6%)	0 (0.0%)	0.080	2.65 (1.07–6.52)	0.034	–	–
30 days								
CV death	6 (1.7%)	4 (2.6%)	1 (4.3%)	0.343	1.58 (0.44–5.60)	0.478	2.61 (0.31–21.68)	0.374
Re-MI	4 (1.1%)	2 (1.3%)	0 (0.0%)	0.999	1.19 (0.21–6.50)	0.839	–	–
Stroke	0 (0.0%)	0 (0.0%)	0 (0.0%)	–	–	–	–	–
CV death/Re-MI/Stroke	8 (2.2%)	6 (3.9%)	1 (4.3%)	0.345	1.78 (0.62–5.15)	0.282	1.95 (0.24–15.66)	0.526
Death	7 (1.9%)	6 (3.9%)	1 (4.3%)	0.265	2.04 (0.68–6.07)	0.199	2.23 (0.27–18.19)	0.451
In stent thrombosis	4 (1.1%)	1 (0.6%)	0 (0.0%)	0.999	0.58 (0.06–5.26)	0.636	–	–
Bleeding	17 (4.7%)	14 (9.1%)	0 (0.0%)	0.090	2.01 (0.99–4.09)	0.052	–	–
TIMI—severe	1 (0.3%)	2 (1.3%)	0 (0.0%)	0.310	4.76 (0.43–52.56)	0.202	–	–
BARC—severe	2 (0.6%)	4 (2.6%)	0 (0.0%)	0.144	4.77 (0.87–26.08)	0.071	–	–

Fisher's exact test and Cox proportional risk model

Endpoint Occurrence in Relation to Stent Type in Patients Treated with Prasugrel vs. Ticagrelor

	Stent			*p*-Value	BMS *		BVS *	
	DES	BMS	BVS		HR (95% CI)	*p*	HR (95% CI)	*p*
Patients Randomized to Ticagrelor								
365 days (biased by high switch rate to clopidogrel)								
CV death	9 (2.5%)	6 (3.9%)	1 (4.3%)	0.420	1.58 (0.56–4.44)	0.384	1.74 (0.22–13.79)	0.596
Re-MI	8 (2.2%)	5 (3.2%)	0 (0.0%)	0.742	1.50 (0.49–4.59)	0.475	–	–
Stroke	2 (0.6%)	1 (0.6%)	0 (0.0%)	0.999	1.19 (0.10–13.16)	0.885	–	–
CV death/Re-MI/Stroke	16 (4.4%)	12(7.8%)	1 (4.3%)	0.294	1.80 (0.85–3.80)	0.124	0.98 (0.13–7.38)	0.984
Death	12 (3.3%)	9 (5.8%)	1 (4.3%)	0.315	1.78 (0.75–4.24)	0.188	1.31 (0.17–10.09)	0.794
In stent thrombosis	6 (1.7%)	1 (0.6%)	0 (0.0%)	0.765	0.39 (0.04–3.27)	0.388	–	–
Bleeding	38 (10.5%)	20 (13.0%)	1 (4.3%)	0.496	1.29 (0.75–2.22)	0.351	0.39 (0.05–2.89)	0.363
TIMI—severe	2 (0.6%)	2 (1.3%)	0 (0.0%)	0.653	2.38 (0.33–16.91)	0.385	–	–
BARC—severe	5 (1.4%)	4 (2.6%)	0 (0.0%)	0.638	1.91 (0.51–7.12)	0.333	–	–

Fisher's exact test and Cox proportional risk model

Conclusions

- Patients with the highest initial risk profile were preferably treated with BMS over BVS.

- BMS were associated with a significantly higher rate of cardiovascular events whether treated with prasugrel or ticagrelor.

THANKS TO ALL STUDY INVESTIGATORS

Cardiocentre, Third Medical Faculty of Charles Univ. and Univ. Hospital Kralovske Vinohrady, Prague: Zuzana Motovska, Petr Widimsky, Jiri Knot, Jaroslav Ulman, Frantisek Bednar, Martin Kamenik, Petra Paulů, Dana Bilkova, Teodora Vichova, Robin Kralik, Karel Vondrak, Vaclav Bufka, Pavel Osmancik, Dalibor Herman, Petr Stros, Karol Curila, Petr Tousek, Tomas Budesinsky.

First Department of Cardioangiology, ICRC, Faculty of Medicine, Masaryk Univ. and St. Anne's Univ. Hospital, Brno: Ota Hlinomaz, Petra Kramariková, Marketa Beranová, Ladislav Groch, Jan Sitar, Michal Rezek, Jiří Seménka, Martin Novák, Jiří Sikora, Blanka Fischerová,

Department of Internal Medicine and Cardiology,Faculty of Medicine Masaryk Univ. and Univ. Hospital Brno: Petr Kala, Roman Miklík , Lumir Koc, Petr Jerabek, Otakar Bocek, Roman Stipal, Jan Kanovsky, Martin Poloczek, Robert Cyprian.

Department of Cardiology, Univ. Hospital andFaculty of Medicine in Pilsen: Milan Hromadka, Richard Rokyta, Jan Pospisil MD.

Cardiology Centre AGEL, Pardubice: Ivo Varvarovsky, Martin Pavolko, Martin Ráchela, Jan Málek, Vladimir Rozsíval, Vojtěch Novotný, Tomáš Lazarák, Jan Matějka.

First Department of Internal Medicine, Univ. Hospital Hradec Kralove: Jaroslav Dusek, Jan Hulka, Josef Stasek.

Cardiocenter, Regional Hospital, Ceske Budejovice: Frantisek Tousek, Ladislav Pesl, Ales Kovarik, Dita Novakova, Martina Zitova, Milan Slapnicka, Radek Krejcí, Tomas Romsauer, Tomas Sattran.

Cardiocenter, Regional Hospital, Karlovy Vary: Bohumil Majtan, Michal Padour, Alexandr Schee, Roman Ondrejcak, Zdenek Peroutka.

Department of Cardiovascular Medicine, First Faculty of Medicine, Charles Univ. and General Univ. Hospital in Prague: Stanislav Simek, Jan Belohlavek .

AGEL Research and Training Institue - Trinec Branch, Cardiovascular Centre, Podlesi Hospital: Marian Branny, Alexandra Vodzinska, Jindrich Cerny, Jan Indrak, Miroslav Hudec, Michal Palowski, Radim Spacek , Daniel Matous.

Cardiovascular Department, Univ. Hospital Ostrava: Jan Mrozek, Martin Porzer, Pavel Kukla.

Department of Cardiology, Masaryk Hospital and UJEP, Usti nad Labem: Pavel Cervinka, Andrej Kupec, Marian Bystron.

First internal cardiology clinic, Univ. Hospital Olomouc: Jiri Ostransky, Martin Sluka. Cardiocenter, Hospital na Homolce: Martin Mates, Bohumil Majtan, Pavel Formanek, Petr Kmonicek, Karel Kopriva, Ondrej Aschermann.

Journal of
Clinical Medicine

MDPI

Article

Stent Selection for Primary Angioplasty and Outcomes in the Era of Potent Antiplatelets. Data from the Multicenter Randomized Prague-18 Trial

Ota Hlinomaz [1], Zuzana Motovska [2,*], Jiri Knot [2], Roman Miklik [3], Mahmoud Sabbah [1,4], Milan Hromadka [5], Ivo Varvarovsky [6], Jaroslav Dusek [7], Michal Svoboda [8], Frantisek Tousek [9], Bohumil Majtan [10], Stanislav Simek [11], Marian Branny [12] and Jiří Jarkovský [8]

Hlinomaz O, Motovska Z, Knot J, Miklik R, Sabbah M, Hromadka M, Varvarovsky I, Dusek J, Svoboda M, Tousek F, Majtan B, Simek S, Branny M, Jarkovský J. Stent Selection for Primary Angioplasty and Outcomes in the Era of Potent Antiplatelets. Data from the Multicenter Randomized Prague-18 Trial. J Clin Med. 2021 Oct 30;10(21):5103. doi: 10.3390/jcm10215103. PMID: 34768623; PMCID: PMC8584734.