Efficacy and Safety of Single DOAC Therapy within One Year in Patients with AF after Coronary Stent Implantation

Young Choi

Assistant Professor, Department of Cardiology,

Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea

Disclosure

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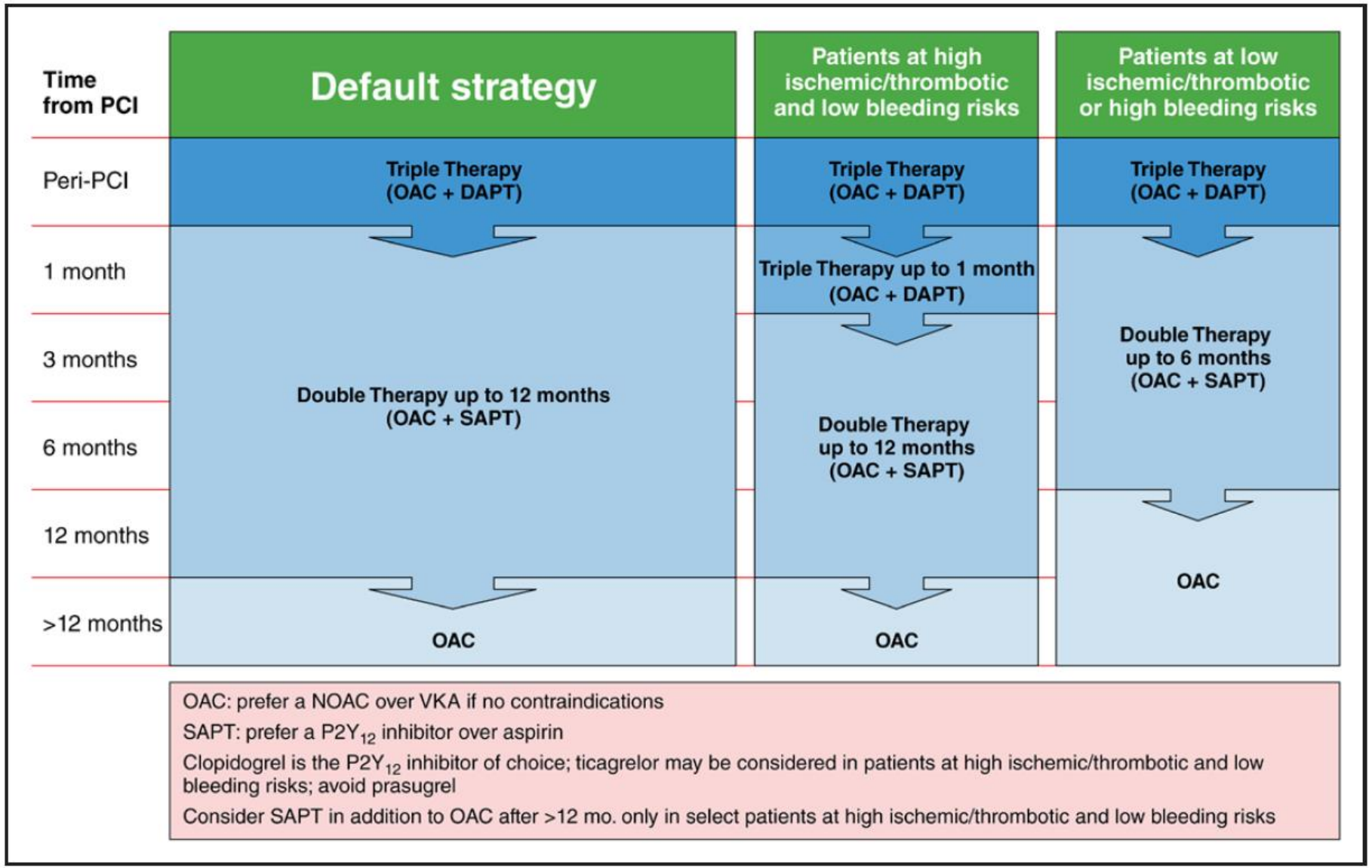
- Grants/Research Support: none
- Consulting Fees: none
- Other: none

Background



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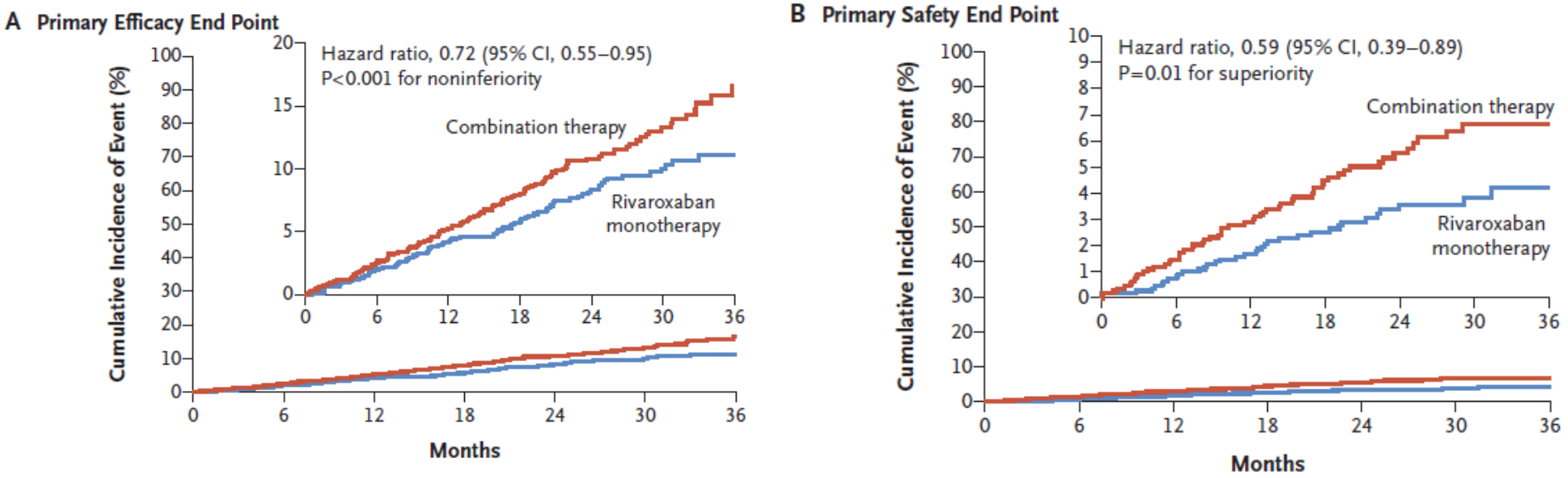
Antithrombotic Therapy for Atrial Fibrillation with Stable Coronary Disease



Stable CAD: stable for >1 year after PCI, angiographically confirmed stable non-treated CAD

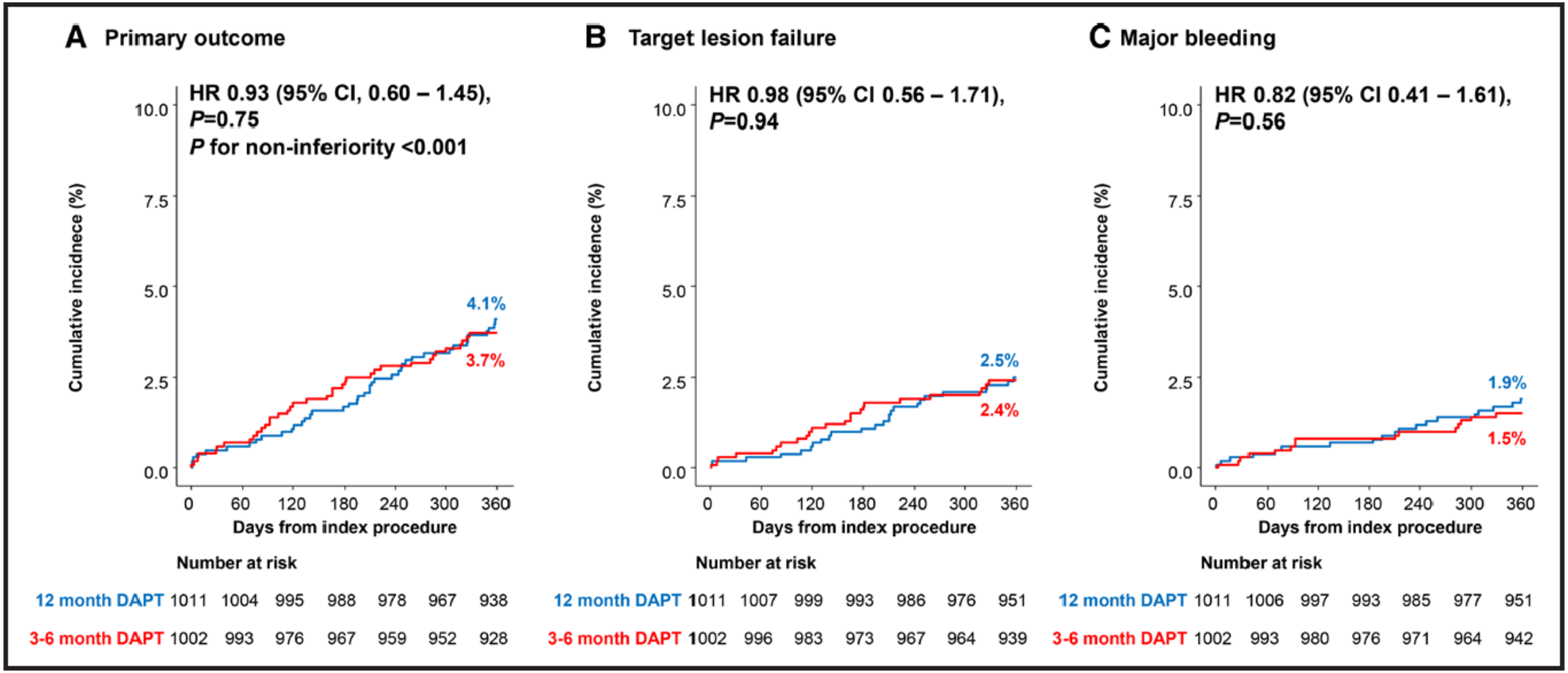
What if patients do not have AF?

Circulation

ORIGINAL RESEARCH ARTICLE

Comparison of 3- to 6-Month Versus 12-Month Dual Antiplatelet Therapy After Coronary Intervention Using the Contemporary Drug-Eluting Stents With Ultrathin Struts: The HOST-IDEA Randomized Clinical Trial

Jung-Kyu Han, MD, PhD*; Doyeon Hwang, MD*; Seokhun Yang, MD; Sang-Hyeon Park, MD; Jeehoon Kang, MD; Han-Mo Yang, MD, PhD; Kyung Woo Park, MD, PhD; Hyun-Jae Kang, MD, PhD; Bon-Kwon Koo, MD, PhD; Seung-Ho Hur, MD, PhD; Weon Kim, MD, PhD; Seok Yeon Kim, MD; Sang-Hyun Park, MD, PhD; Seung Hwan Han, MD, PhD; Sang-Hyun Kim, MD, PhD; Sanghoon Shin, MD, PhD; Yong Hoon Kim, MD, PhD; Kyungil Park, MD, PhD; Namho Lee, MD, PhD; Seung Jin Lee, MD, PhD; Jin Won Kim, MD, PhD; Hyo-Soo Kim, MD, PhD


A Primary outcome
HR 0.93 (95% CI, 0.60 – 1.45), P=0.75
P for non-inferiority <0.001
Cumulative incidnece (%)
10.0
7.5
5.0
2.5
0.0
4.1%
3.7%
0 60 120 180 240 300 360
Days from index procedure
Number at risk
12 month DAPT 1011 1004 995 988 978 967 938
3-6 month DAPT 1002 993 976 967 959 952 928
B Target lesion failure
HR 0.98 (95% CI 0.56 – 1.71), P=0.94
Cumulative incidence (%)
10.0
7.5
5.0
2.5
0.0
2.5%
2.4%
0 60 120 180 240 300 360
Days from index procedure
Number at risk
12 month DAPT 1011 1007 999 993 986 976 951
3-6 month DAPT 1002 996 983 973 967 964 939
C Major bleeding
HR 0.82 (95% CI 0.41 – 1.61), P=0.56
Cumulative incidence (%)
10.0
7.5
5.0
2.5
0.0
1.9%
1.5%
0 60 120 180 240 300 360
Days from index procedure
Number at risk
12 month DAPT 1011 1006 997 993 985 977 951
3-6 month DAPT 1002 993 980 976 971 964 942

Study aim

- The current study aimed to assess efficacy and safety of early direct oral anticoagulant (DOAC) monotherapy from 6 months after coronary stent implantation in patients with AF using real world data.

Method

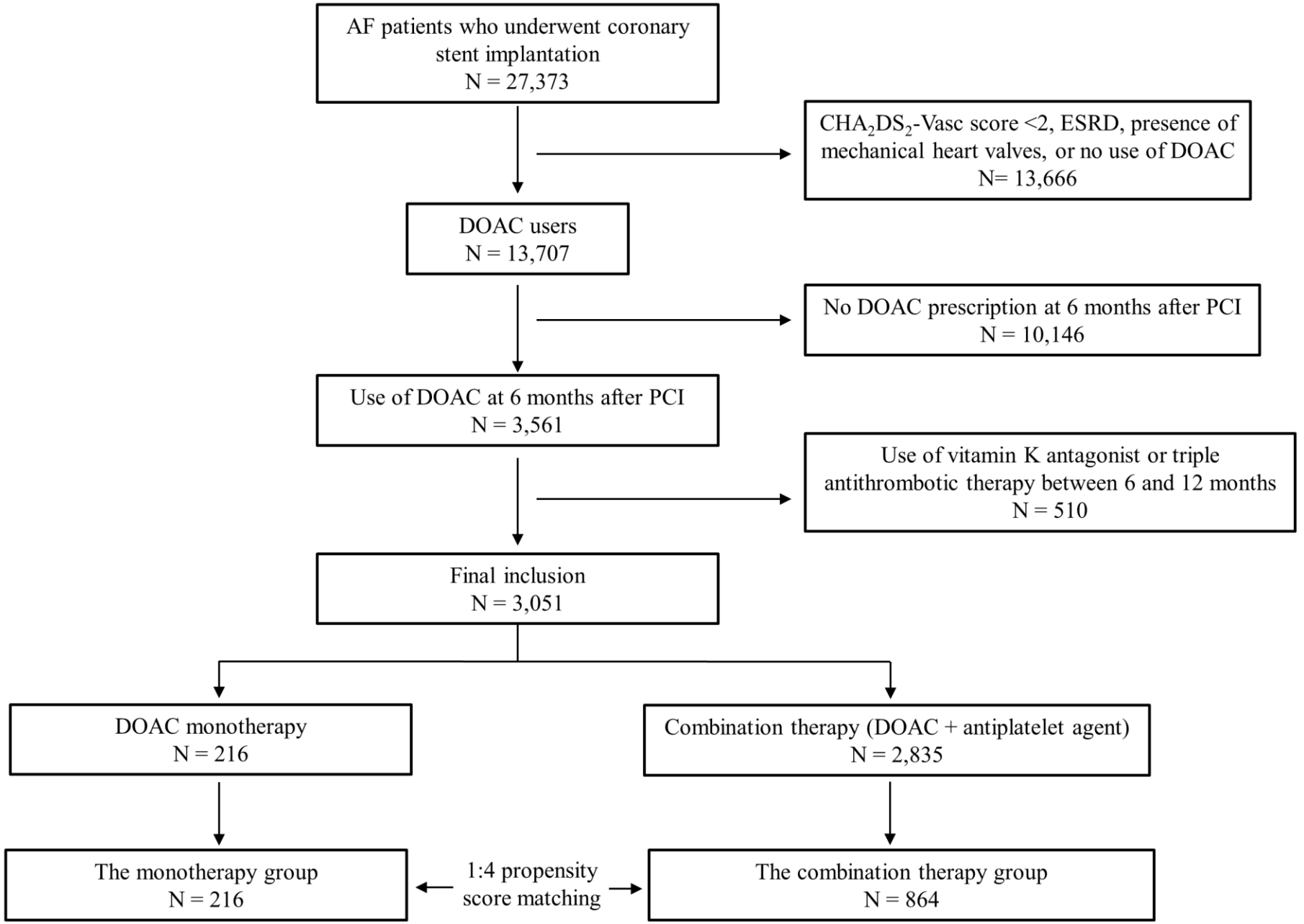
- A retrospective study using Korean National Health Insurance Service (NHIS) database.
- Data of patients diagnosed with AF and underwent PCI between 2009 and 2020 were analyzed.
- **Inclusion criteria**
  - Diagnosis of AF before PCI using DES
  - CHA_2DS_2-Vasc score ≥2
  - Use of DOAC at 6 months after PCI

- **Exclusion criteria**
  - Age <18 years
  - Presence of mechanical heart valves
  - ESRD
  - Use of VKA or DAPT after 6 months from PCI

Study design

- **Group definition**
  - Monotherapy group: prescribed single DOAC at 6 months after PCI
  - Combination therapy group: prescribed DOAC and an antiplatelet agent at 6 months after PCI

- **Outcome analyses**
  - All outcomes of interest were analyzed between 6 and 12 months after PCI, and the subjects were censored when the index treatment drug was discontinued.


AF patients who underwent coronary stent implantation
N = 27,373
CHA_2DS_2-Vasc score <2, ESRD, presence of mechanical heart valves, or no use of DOAC
N= 13,666
DOAC users
N = 13,707
No DOAC prescription at 6 months after PCI
N = 10,146
Use of DOAC at 6 months after PCI
N = 3,561
Use of vitamin K antagonist or triple antithrombotic therapy between 6 and 12 months
N = 510
Final inclusion
N = 3,051
DOAC monotherapy
N = 216
Combination therapy (DOAC + antiplatelet agent)
N = 2,835
The monotherapy group
N = 216
1:4 propensity score matching
The combination therapy group
N = 864

Outcome analyses

- **Primary endpoint:**
  - A major adverse cardiovascular event (MACE), defined as a composite of cardiovascular death, MI, ischemic stroke, or systemic embolic event.
  - An outcome event of MI, stroke or systemic embolic event was defined as a major diagnosis for admission.

- **Secondary endpoint**
  - All-cause death, major bleeding (defined as a bleeding requiring hospitalization), other bleeding events
  - A net adverse clinical event (a composite of all-cause death, MI, ischemic stroke, systemic thromboembolic event or major bleeding)

Baseline characteristics before PS matching

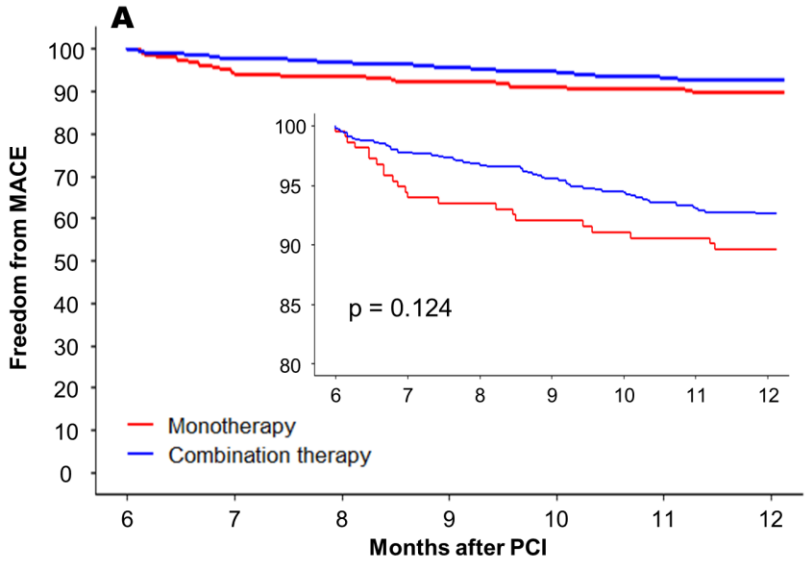
	Monotherapy (n=216)	Combination therapy (n=2835)	p-value
Age, years	75.5 ± 8.7	74.4 ± 8.5	0.090
Male, n (%)	133 (61.5%)	1878 (66.2%)	0.162
Comorbidities, n (%)			
Hypertension	185 (85.6%)	2551 (90.0%)	0.057
Diabetes mellitus	140 (64.8%)	1883 (66.4%)	0.630
Heart failure	167 (77.3%)	2056 (72.5%)	0.126
Chronic kidney disease	75 (34.7%)	780 (27.5%)	0.023
Prior history of stroke	100 (46.3%)	1102 (38.8%)	0.031
Prior history of MI	66 (30.5%)	1095 (38.6%)	0.018
Liver cirrhosis	4 (1.8%)	91 (3.2%)	0.268
Prior history of ICH	9 (4.1%)	90 (3.1%)	0.427
Prior history of GI bleeding	63 (29.1%)	797 (28.1%)	0.740
Prior CABG	0	7 (0.25%)	0.467
CHA_2DS_2-Vasc score	6.1 ± 1.6	5.9 ± 1.6	0.036
Diagnosis at index PCI	-	-	0.014
Non-AMI, n (%)	183 (84.7%)	2198 (77.5%)	
AMI, n (%)	33 (15.2%)	637 (22.5%)	
DOAC dose reduction, n (%)	153 (70.8%)	2241 (79.1%)	0.004
Antiplatelet agent type			
Aspirin		361 (12.7%)	
P2Y12 inhibitor		2474 (87.3%)	
Other medications, n (%)			
ACEi/ARB	172 (79.6%)	2148 (75.7%)	0.199
Statin	179 (82.8%)	2390 (84.3%)	0.577
Beta blocker	179 (82.8%)	2223 (78.4%)	0.122

Baseline characteristics after PS matching

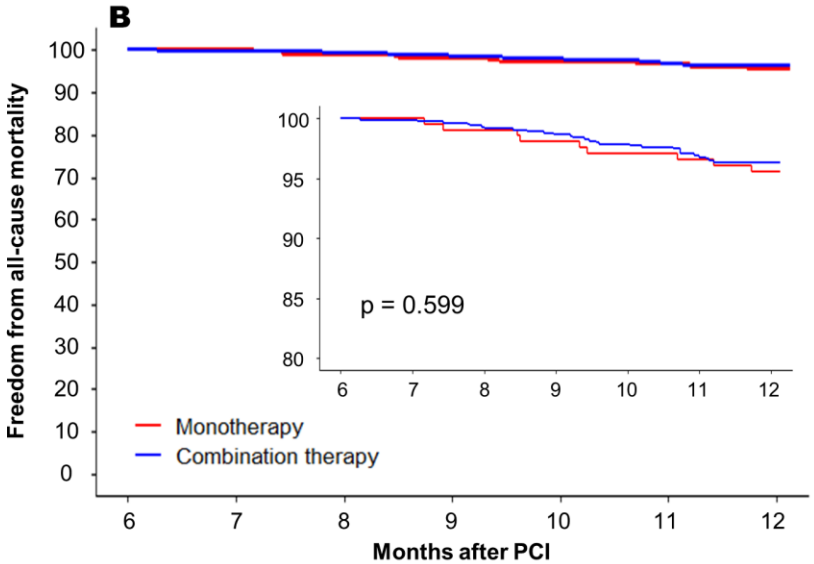
	Monotherapy (n=216)	Combination therapy (n=864)	p-value
Age, years	75.5 ± 8.7	75.6 ± 8.3	0.861
Male, n (%)	133 (61.5%)	526 (60.9%)	0.851
Comorbidities, n (%)			
Hypertension	185 (85.6%)	763 (88.3%)	0.341
Diabetes mellitus	140 (64.8%)	587 (67.9%)	0.381
Heart failure	167 (77.3%)	657 (76.0%)	0.693
Chronic kidney disease	75 (34.7%)	281 (32.5%)	0.538
Prior history of stroke	100 (46.3%)	362 (41.9%)	0.242
Prior history of MI	66 (30.5%)	275 (31.8%)	0.718
Liver cirrhosis	4 (1.8%)	22 (2.5%)	0.551
Prior history of ICH	9 (4.1%)	26 (3.0%)	0.390
Prior history of GI bleeding	63 (29.1%)	235 (27.2%)	0.562
Prior CABG	0	0	NS
CHA_2DS_2-Vasc score	6.1 ± 1.6	6.1 ± 1.6	0.918
Diagnosis at index PCI			0.569
Non-AMI, n (%)	183 (84.7%)	745 (86.2%)	
AMI, n (%)	33 (15.2%)	119 (13.7%)	
DOAC dose reduction, n (%)	153 (70.8%)	629 (72.8%)	0.562
Antiplatelet agent type			
Aspirin		111 (12.8%)	
P2Y12 inhibitor		753 (87.2%)	
Other medications, n (%)			
ACEi/ARB	172 (79.6%)	689 (79.7%)	0.969
Statin	179 (82.8%)	724 (83.8%)	0.742
Beta blocker	179 (82.8%)	725 (83.9%)	0.710

Outcomes

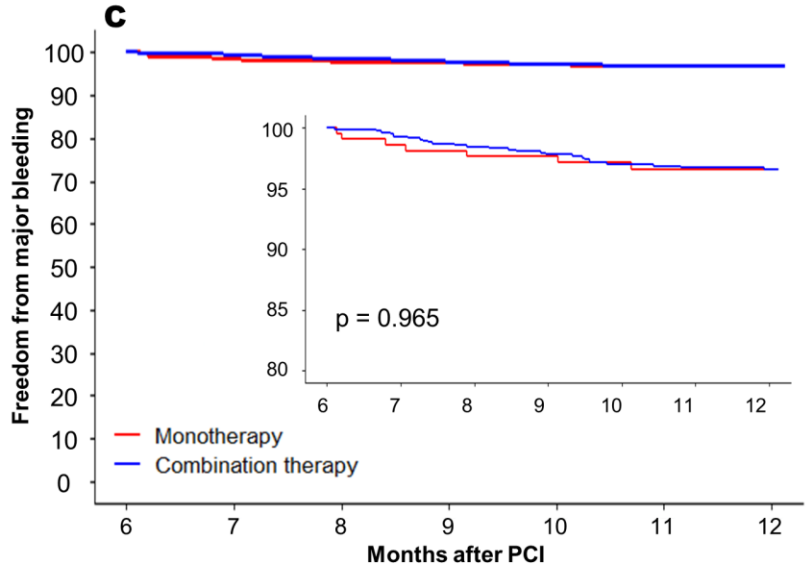
Outcomes, n (%)	Monotherapy (N=216)	Combination therapy (N=864)	Hazard ratio	95% CI	p-value
MACE	22 (10.2%)	59 (6.8%)	1.467	0.899 – 2.394	0.125
Cardiovascular death	4 (1.8%)	15 (1.7%)	1.026	0.340 – 3.090	0.964
Myocardial infarction	5 (2.3%)	17 (1.9%)	1.135	0.419 – 3.078	0.802
Ischemic stroke	13 (6.0%)	29 (3.3%)	1.767	0.919 – 3.400	0.088
Systemic thromboembolic event	2 (0.9%)	5 (0.6%)	1.561	0.303 – 8.045	0.594
All-cause death	9 (4.1%)	28 (3.2%)	1.233	0.577 – 2.592	0.599
Major bleeding	7 (3.2%)	27 (3.1%)	1.018	0.444 – 2.339	0.965
Intracranial bleeding	0	0			
Gastrointestinal bleeding	5 (2.3%)	18 (2.1%)	1.091	0.405 – 2.938	0.863
Other major bleeding	2 (0.9%)	10 (1.1%)	0.777	0.170 – 3.547	0.744
Any bleeding	16 (7.4%)	85 (9.8%)	0.730	0.428 – 1.246	0.248
Net adverse clinical events	31 (14.3%)	90 (10.4%)	1.370	0.911 – 2.060	0.131



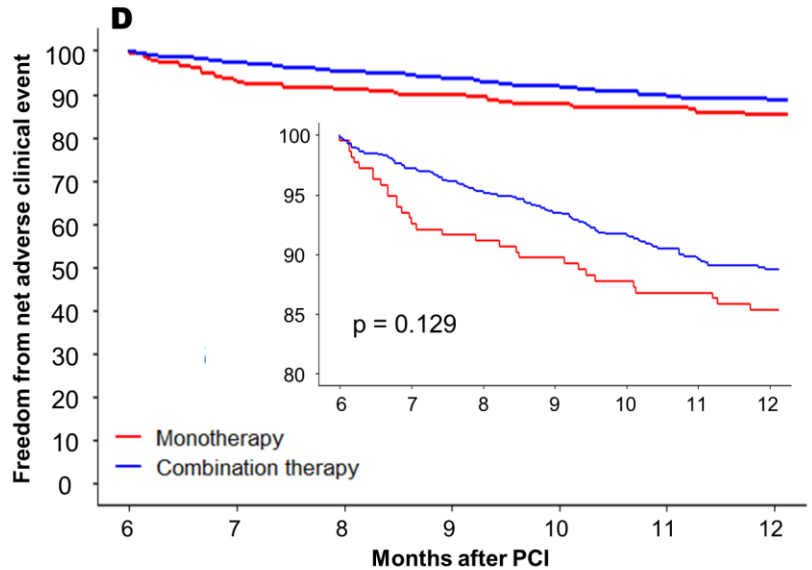
Monotherapy	216	201	196	189	186	184	177
Combination therapy	864	822	781	744	713	667	621



Monotherapy	216	212	206	200	195	192	184
Combination therapy	864	841	804	773	743	700	652



Monotherapy	216	208	201	193	188	185	178
Combination therapy	864	832	790	757	720	683	640



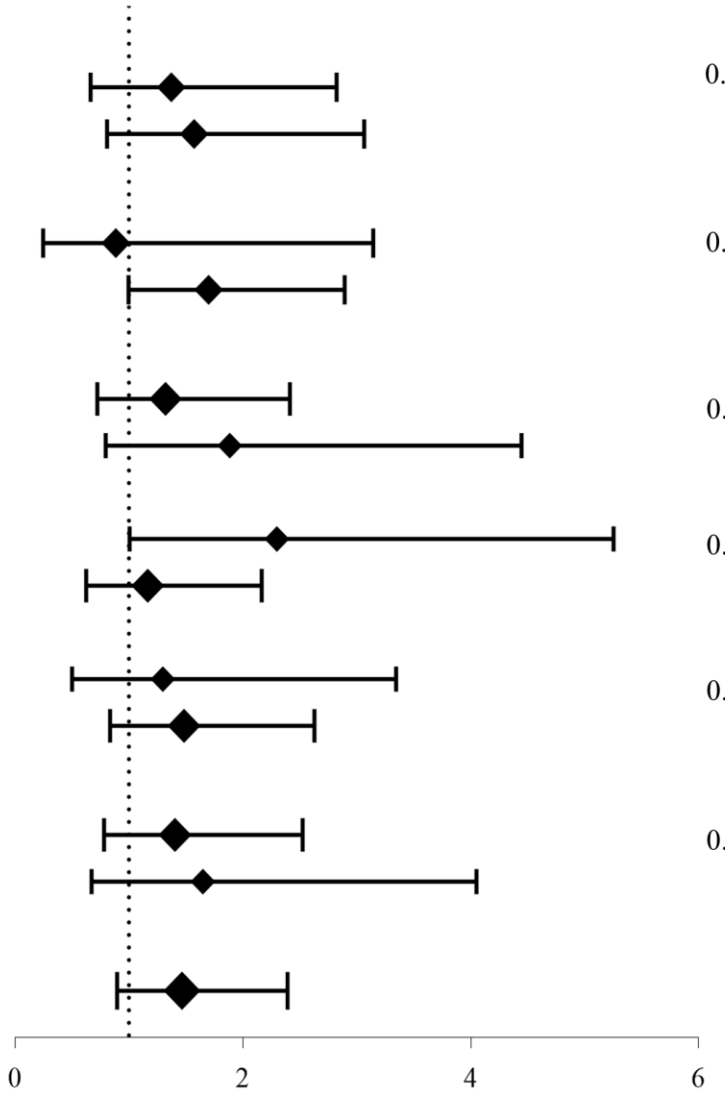
Monotherapy	216	208	201	193	188	185	178
Combination therapy	864	832	790	757	720	683	640

Univariate and multivariate analyses for the predictor of MACE

	Univariate			Multivariate		
Variable	HR	95% CI	P	Adjusted HR	95% CI	p
Age	1.062	1.029 – 1.095	<0.001	1.034	1.001 – 1.068	0.040
Male	0.541	0.35 – 0.837	0.006	0.682	0.427 – 1.089	0.109
Diabetes	1.231	0.76 – 1.996	0.398			
HF	1.62	0.895 – 2.933	0.110	1.233	0.671 – 2.263	0.498
CKD	1.253	0.8 – 1.961	0.324			
Prior stroke	3.146	1.963 – 5.040	<0.001	2.975	1.848 – 4.789	<0.001
AMI at index PCI	2.743	1.702 – 4.419	<0.001	2.458	1.513 – 3.992	<0.001
RAS blocker	0.892	0.529 – 1.507	0.892			
Statin	0.880	0.502 – 1.541	0.653			
Beta blocker	1.110	0.601 – 2.049	0.739			
DOAC monotherapy	1.467	0.899 – 2.394	0.124	1.456	0.892 – 2.377	0.132

Subgroup analyses -MACE

	Monotherapy	Combination therapy	P-value	P for interaction
Sex				
Male	10/133 (7.5%)	28/526 (5.3%)	0.390	0.804
Female	12/83 (14.4%)	31/338 (9.1%)	0.181	
Age				
<75 yr	3/88 (3.4%)	12/336 (3.5%)	0.853	0.359
≥75 yr	19/128 (14.8%)	47/528 (8.9%)	0.051	
Diabetes mellitus				
Yes	14/140 (10.0%)	44/587 (7.5%)	0.362	0.501
No	8/76 (10.5%)	15/277 (5.4%)	0.147	
Diagnosis at PCI				
AMI	9/33 (27.2%)	15/119 (12.6%)	0.048	0.192
Non-AMI	13/183 (7.1%)	44/745 (5.9%)	0.626	
Prior major bleeding				
Yes	6/43 (13.9%)	15/137 (10.9%)	0.589	0.813
No	16/173 (9.2%)	44/727 (6.0%)	0.176	
DOAC dose reduction				
Yes	15/153 (9.8%)	44/629 (7.0%)	0.254	0.768
No	7/63 (11.1%)	15/235 (6.4%)	0.273	
Total	22/216 (10.2%)	59/864 (6.8%)	0.125	



Limitation

- The number of analyzed patients was too small to generalize the results.
- The underlying diseases and outcome events except death were defined according to diagnostic codes only.
- Retrospective study.
- Cannot ascertain medication adherence.
- No information on non-treated coronary artery status, complexity of PCI/target lesions.

Conclusions

- Early application of DOAC monotherapy from 6 months after PCI in AF patients was associated with a non-significant increase in MACE and a similar major bleeding rate, compared to dual combination therapy.

- The observed trend for a higher incidence of ischemic events in the monotherapy group, warrants cautious decision-making and watchful follow-up when considering the early de-escalation of antithrombotic regimens, especially for post-AMI population.

Thank you for listening