

**Routine Follow Up Coronary Angiography versus
Clinical Follow Up Only in Acute Myocardial
Infarction Patients following Percutaneous
Coronary Intervention with Drug-eluting Stents:
3-year Clinical Follow Up Results**

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Disclosure Information

I have nothing to disclose.

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Background (1)

1. Routine angiographic follow up after primary percutaneous coronary intervention (PCI) in ST elevation myocardial infarction (STEMI) is associated with doubling of the rate of revascularization without an improvement in death or MI, and therefore cannot be recommended.

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2. Angiographic restenosis rate remains acceptable in patients with complex chronic total occlusion (CTO) successfully treated by drug-eluting stents (DES) despite a long stent length.

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Background (2)

3. It is unclear whether the routine follow up (FU) coronary angiography (CAG) regardless of patient's symptoms after successful PCI with DESs in overall acute myocardial infarction (AMI) patients (pts) is beneficial or not, particularly in a series of Korean population

Purpose

The aim of this study was to evaluate the 3-year clinical outcomes between the mid-term Routine CAG FU group (6-9 months) and the clinical driven FU group in AMI pts following index PCI treated with DESs.

Methods

1. Study Population

The study population consisted of 774 consecutive AMI patients (pts) underwent PCI with unrestricted utilization of DESs from January 2004 to May 2011.

2. Study Groups in AMI pts

Routine CAG FU group (n=452)

Clinical FU group (n=349)

Methods

3. Antiplatelet Regimen

- 1) All pts received Aspirin; 100 mg orally.
- 2) All pts received Clopidogrel (Plavix®) preloaded 300-600 mg before PCI, followed by daily administration of 75 mg and encouraged to continue at least for 1 year.
- 3) Usage of adjunctive Cilostazol to dual antiplatelet regimen (asprin + clopidogrel) was depending on physician's discretion. Cilostazol was administered by 200mg post-loading and then 100mg bid for at least one month

Methods

4. Antithrombotic therapy used for PCI

- 1) Enoxaparin (Clexane®); 60mg bid before PCI and after PCI during the hospital stay (within 7 days).
- 2) Unfractionated Heparin; a bolus of 50 U/kg prior to PCI for 1st one hour
- 3) GP IIb/IIIa blocker (Reopro®); depend on physician's discretion.

Methods

5. PCI Procedure

- 1) A variety of atheroablative devices were not utilized and mostly simple predilation or was performed to get an adequate luminal diameter which was necessary to accommodate the unexpanded DES and their delivery system.
- 2) Thrombus aspiration or mechanical thrombectomy were performed if clinically indicated.

6. Study Endpoints

; Six-month to 9-month angiographic and 3-year clinical outcomes were compared between the two groups.

Statistics

1. All statistical analyses were performed using SPSS 20.0.
2. Continuous variables were expressed as means \pm standard deviation and were compared using Student's t-test.
3. Categorical data were expressed as percentages and were compared using chi-square statistics or Fisher's exact test.
4. A *P*-value of 0.05 was considered statistically significant.

Statistics

5. To account for the selection bias of treatment methods, we calculated propensity score predicting probability for routine CAG FU in each patient.
6. The covariates that were adjusted for CHF included age, gender, hypertension, dyslipidemia, smoking, alcoholic, diabetes mellitus, prior MI, chronic heart failure and prior cerebrovascular disease, chronic kidney disease, diagnosis (STEMI, NSTEMI), target vessel, left ventricular ejection fraction%, and routine CAG FU.
7. The C-statistic for the logistic regression model that was used to calculate the propensity score matching for the 2 groups was 0.739. The routine CAG FU group were then 1-to-1 matched to the control group on the propensity scores with the nearest available pair matching method. Subjects were matched with a caliper width equal to 0.05. The procedure yielded 248 well-matched pairs. After propensity score matching, the baseline covariates were compared between the 2 groups.

Results

Baseline Clinical Characteristics (1)

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CAG (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
Gender (male)	555 (71.7)	318 (74.8)	237 (67.9)	0.034	352 (70.9)	170 (68.5)	182 (73.3)	0.235
Age	61.6 ± 12.1	59.8 ± 11.5	63.6 ± 12.7	< 0.001	61.7 ± 12.0	61.8 ± 11.1	61.7 ± 12.9	0.912
Blood pressure; BP								
Systolic BP	120 ± 19	120 ± 19	120 ± 20	0.924	120 ± 20	120 ± 20	119 ± 19	0.585
Diastolic BP	72 ± 13	72 ± 13	71 ± 13	0.550	72 ± 13	72 ± 14	72 ± 13	0.683
Heart rate	76 ± 19	75 ± 15	78 ± 23	0.049	76 ± 21	76 ± 17	76 ± 24	0.784
LVEf, %	47.6 ± 11.0	48.1 ± 10.5	47.1 ± 11.6	0.255	48.3 ± 10.6	48.5 ± 10.4	48.1 ± 10.8	0.638
LVEf (<50%)	333 (43.0)	173 (40.7)	160 (45.8)	0.151	202 (40.7)	97 (39.1)	105 (42.3)	0.465
Diagnosis								
Myocardial infarction: MI	774 (100.0)	425 (100.0)	349 (100.0)	< 0.001	496 (100.0)	248 (100.0)	248 (100.0)	< 0.001
ST segment elevation MI	415 (53.6)	228 (53.6)	187 (53.5)	0.986	257 (51.8)	127 (51.2)	130 (52.4)	0.787
Non-ST segment elevation MI	359 (46.3)	197 (46.3)	162 (46.4)	0.986	239 (48.1)	121 (48.7)	118 (47.5)	0.787
Cardiogenic Shock	33 (4.2)	17 (4.0)	16 (4.5)	0.689	22 (4.4)	11 (4.4)	11 (4.4)	ns

Baseline Clinical Characteristics (2)

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CAG (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CA G (n=248)	Control (n=248)	p Value
Factors of Risk								
Hypertension	452 (58.3)	225 (52.9)	227 (65)	0.001	288 (58.0)	147 (59.2)	141 (56.8)	0.585
Diabetes	261 (33.7)	129 (30.3)	132 (37.8)	0.029	168 (33.8)	88 (35.4)	80 (32.2)	0.448
Insulin	107 (13.8)	47 (11.0)	60 (17.1)		69 (13.9)	34 (13.7)	35 (14.1)	
Medication	145 (18.7)	76 (17.8)	69 (19.7)		93 (18.7)	49 (19.7)	44 (17.7)	
Dietary	9 (1.1)	6 (1.4)	3 (0.8)		6 (1.2)	5 (2.0)	1 (0.4)	
Dyslipidemia	156 (20.1)	94 (22.1)	62 (17.7)	0.133	94 (18.9)	43 (17.3)	51 (20.5)	0.359
Chronic kidney disease	36 (4.6)	9 (2.1)	27 (7.7)	< 0.001	10 (2.0)	8 (3.2)	2 (0.8)	0.055
Renal dysfunction	33 (4.2)	9 (2.1)	24 (6.8)	0.001	10 (2.0)	8 (3.2)	2 (0.8)	0.055
Dialysis	3 (0.3)	0 (0.0)	3 (0.8)	0.091				
Cerebrovascular accident	36 (4.6)	20 (4.7)	16 (4.5)	0.936	22 (4.4)	11 (4.4)	11 (4.4)	ns
Ischemic stroke	28 (3.6)	15 (3.5)	13 (3.7)	0.885	15 (3.0)	7 (2.8)	8 (3.2)	0.793
Hemorrhagic stroke	8 (1.0)	5 (1.1)	3 (0.8)	0.736	7 (1.4)	4 (1.6)	3 (1.2)	ns
Peripheral vessel disease	14 (1.8)	5 (1.1)	9 (2.5)	0.145	5 (1.0)	3 (1.2)	2 (0.8)	ns

Baseline Clinical Characteristics (3)

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CAG (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
History of coronary artery disease	28 (3.6)	16 (3.7)	12 (3.4)	0.809	16 (3.2)	9 (3.6)	7 (2.8)	0.611
Previous MI	8 (1.0)	6 (1.4)	2 (0.5)	0.305	5 (1.0)	3 (1.2)	2 (0.8)	ns
Previous PTCA	23 (2.9)	13 (3.0)	10 (2.8)	0.875	14 (2.8)	9 (3.6)	5 (2.0)	0.278
Previous CABG	2 (0.2)	0 (0.0)	2 (0.5)	0.203	2 (0.4)	0 (0.0)	2 (0.8)	0.499
History smokers	408 (52.7)	243 (57.1)	165 (47.2)	0.006	257 (51.8)	125 (50.4)	132 (53.2)	0.529
Current smokers	313 (40.4)	186 (43.7)	127 (36.3)	0.038	199 (40.1)	96 (38.7)	103 (41.5)	0.521
History alcoholics	243 (31.3)	136 (32.0)	107 (30.6)	0.689	155 (31.2)	74 (29.8)	81 (32.6)	0.498
Current alcoholics	219 (28.2)	122 (28.7)	97 (27.7)	0.779	144 (29.0)	69 (27.8)	75 (30.2)	0.553

Baseline Laboratory Findings

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CA G (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
Hemoglobin	13.1 ± 1.8	13.3 ± 1.7	12.9 ± 2.0	0.002	13.1 ± 1.7	13.1 ± 1.6	13.0 ± 1.8	0.632
Hematocrit	38.8 ± 5.2	39.3 ± 4.9	38.0 ± 5.6	0.001	38.7 ± 4.9	38.8 ± 4.6	38.6 ± 5.3	0.599
CK-MB (max)	105. ± 150.	111. ± 152.	98.3 ± 147.	0.212	106. ± 149.	112. ± 149.	100. ± 148.	0.344
Troponin T (max)	1.20 ± 2.71	1.13 ± 2.41	1.28 ± 3.07	0.450	1.23 ± 2.71	1.12 ± 2.16	1.33 ± 3.26	0.409
High sensitivity CRP	17. ± 32.6	17. ± 32.1	17. ± 33.2	0.917	16. ± 31.1	16. ± 28.3	16. ± 34.0	0.830
Total cholesterol	185 ± 42	186 ± 41	183 ± 43	0.373	184 ± 43	184 ± 42	184 ± 44	0.999
Triglyceride	128 ± 88	133 ± 85	123 ± 92.	0.260	129 ± 87	127 ± 78	130 ± 96.	0.722
HDL cholesterol	43 ± 10	44 ± 10	43 ± 11	0.502	44 ± 11	44 ± 11	43 ± 11	0.205
LDL cholesterol	121 ± 37	124 ± 36	119 ± 38	0.213	121 ± 39	121 ± 38	120 ± 39	0.735
Apolipoprotein A-I	120 ± 24	122 ± 21	118 ± 27	0.205	122 ± 24	125 ± 22	118 ± 27	0.050
Apolipoprotein B	77 ± 26	75 ± 25	80 ± 29	0.104	78 ± 27	76 ± 25	81 ± 29	0.193
Lipoprotein_A	29 ± 27	30 ± 27	27 ± 27	0.240	28 ± 27	29 ± 26	27 ± 27	0.676
Fasting blood glucose	134 ± 57	130 ± 50	139 ± 65	0.052	137 ± 59	135 ± 51	139 ± 68	0.454
A1c %	6.5 ± 1.4	6.4 ± 1.3	6.6 ± 1.6	0.091	6.5 ± 1.4	6.5 ± 1.3	6.5 ± 1.6	0.941
Creatinine	1.0 ± 0.8	0.9 ± 0.7	1.1 ± 1.0	0.063	0.9 ± 0.7	0.9 ± 0.8	0.9 ± 0.7	0.815

Post PCI Medications

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CAG (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
Aspirin	730 (94.3)	394 (92.7)	336 (96.2)	0.033	469 (94.5)	234 (94.3)	235 (94.7)	0.843
Clopidogrel	723 (93.4)	395 (92.9)	328 (93.9)	0.561	463 (93.3)	231 (93.1)	232 (93.5)	0.857
Cilostazol	190 (24.5)	110 (25.8)	80 (22.9)	0.341	118 (23.7)	57 (22.9)	61 (24.5)	0.673
Prasugrel	6 (0.7)	2 (0.4)	4 (1.1)	0.417	4 (0.8)	2 (0.8)	2 (0.8)	ns
Beta blockers	462 (59.6)	244 (57.4)	218 (62.4)	0.154	295 (59.4)	146 (58.8)	149 (60.0)	0.784
Calcium channel blockers	260 (33.5)	155 (36.4)	105 (30.0)	0.061	163 (32.8)	85 (34.2)	78 (31.4)	0.503
Anti angiotensin agents	513 (66.2)	273 (64.2)	240 (68.7)	0.184	328 (66.1)	161 (64.9)	167 (67.3)	0.569
Angiotensin receptor blockers	237 (30.6)	129 (30.3)	108 (30.9)	0.859	148 (29.8)	76 (30.6)	72 (29.0)	0.695
Angiotensin converting enzyme inhibitors	310 (40.0)	166 (39.0)	144 (41.2)	0.534	197 (39.7)	94 (37.9)	103 (41.5)	0.409
Diuretics	167 (21.5)	91 (21.4)	76 (21.7)	0.902	112 (22.5)	55 (22.1)	57 (22.9)	0.830
Statins	693 (89.5)	378 (88.9)	315 (90.2)	0.552	450 (90.7)	224 (90.3)	226 (91.1)	0.757
Proton pump inhibitors	70 (9.0)	31 (7.2)	39 (11.1)	0.061	46 (9.2)	24 (9.6)	22 (8.8)	0.757

Angiographic Characteristics (1)

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CAG (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
Treat Lesion								
Left main	22 (2.8)	14 (3.2)	8 (2.2)	0.404	10 (2.0)	5 (2.0)	5 (2.0)	ns
Left anterior descending	427 (55.1)	222 (52.2)	205 (58.7)	0.070	260 (52.4)	131 (52.8)	129 (52.0)	0.857
Left circumflex	228 (29.4)	131 (30.8)	97 (27.7)	0.358	149 (30.0)	74 (29.8)	75 (30.2)	0.922
Right coronary artery	295 (38.1)	172 (40.4)	123 (35.2)	0.136	194 (39.1)	95 (38.3)	99 (39.9)	0.713
Lesion type								
Type A	-	-	-		-	-	-	
Type B1	16 (2.0)	6 (1.4)	10 (2.8)	0.157	10 (2.0)	5 (2.0)	5 (2.0)	ns
Type B2	129 (16.6)	71 (16.7)	58 (16.6)	0.974	84 (16.9)	41 (16.5)	43 (17.3)	0.811
Type C	629 (81.2)	348 (81.8)	281 (80.5)	0.628	402 (81.0)	202 (81.4)	200 (80.6)	0.819
Bifurcation lesion								
Lefevre 1	141 (18.2)	77 (18.1)	64 (18.3)		96 (19.3)	43 (17.3)	53 (21.3)	
Lefevre 2	60 (7.7)	38 (8.9)	22 (6.3)		37 (7.4)	22 (8.8)	15 (6.0)	
Lefevre 3	22 (2.8)	11 (2.5)	11 (3.1)		17 (3.4)	7 (2.8)	10 (4.0)	
Lefevre 4	11 (1.4)	8 (1.8)	3 (0.8)		5 (1.0)	4 (1.6)	1 (0.4)	
Lefevre 5	38 (4.9)	20 (4.7)	18 (5.1)		23 (4.6)	11 (4.4)	12 (4.8)	
Lefevre 6	20 (2.5)	8 (1.8)	12 (3.4)		14 (2.8)	6 (2.4)	8 (3.2)	

Angiographic Characteristics (2)

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CA G (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
Left main disease	41 (5.2)	21 (4.9)	20 (5.7)	0.626	22 (4.4)	10 (4.0)	12 (4.8)	0.663
Multi-vessel disease	175 (22.6)	103 (24.2)	72 (20.6)	0.233	102 (20.5)	49 (19.7)	53 (21.3)	0.657
1-VD	599 (77.3)	322 (75.7)	277 (79.3)		394 (79.4)	199 (80.2)	195 (78.6)	
2-VD	148 (19.1)	90 (21.1)	58 (16.6)		83 (16.7)	39 (15.7)	44 (17.7)	
3-VD	27 (3.4)	13 (3.0)	14 (4.0)		19 (3.8)	10 (4.0)	9 (3.6)	
No. of vessel	1.2 ± 0.5	1.2 ± 0.5	1.2 ± 0.5	0.475	1.2 ± 0.5	1.2 ± 0.5	1.2 ± 0.5	0.793
No. of lesion	1.5 ± 0.8	1.5 ± 0.8	1.5 ± 0.8	0.635	1.5 ± 0.8	1.5 ± 0.8	1.5 ± 0.8	0.959
Ostial (≤ 5 mm)	143 (18.4)	77 (18.1)	66 (18.9)	0.777	87 (17.5)	43 (17.3)	44 (17.7)	0.906
Diffuse long lesion (>3cm)	351 (45.3)	191 (44.9)	160 (45.8)	0.802	231 (46.5)	117 (47.1)	114 (45.9)	0.787
Small vessel stenting (≤ 2.25 m m)	41 (5.2)	23 (5.4)	18 (5.1)	0.875	23 (4.6)	10 (4.0)	13 (5.2)	0.522
Calcified lesion	109 (14.0)	47 (11.0)	62 (17.7)	0.008	62 (12.5)	30 (12.0)	32 (12.9)	0.786
Drug-eluting Stents								
Sirolimus-eluting	187 (24.1)	124 (29.1)	63 (18.0)	< 0.001	109 (21.9)	58 (23.3)	51 (20.5)	0.448
Paclitaxel-eluting	217 (28.0)	149 (35)	68 (19.4)	< 0.001	124 (25.0)	66 (26.6)	58 (23.3)	0.407
Zotarolimus-eluting	243 (31.3)	108 (25.4)	135 (38.6)	< 0.001	167 (33.6)	84 (33.8)	83 (33.4)	0.924
Everolimus-eluting	172 (22.2)	68 (16.0)	104 (29.7)	< 0.001	115 (23.1)	51 (20.5)	64 (25.8)	0.167

One-year Clinical Outcomes

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CA G (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
Total death	3 (0.3)	1 (0.2)	2 (0.5)	0.592	3 (0.6)	1 (0.4)	2 (0.8)	ns
Cardiac death								
Myocardial infarction: MI	5 (0.6)	5 (1.1)	0 (0.0)	0.068	1 (0.2)	1 (0.4)	0 (0.0)	ns
ST segment elevation MI	1 (0.1)	1 (0.2)	0 (0.0)	ns				
Revascularizations	73 (9.4)	70 (16.4)	3 (0.8)	< 0.001	51 (10.2)	48 (19.3)	3 (1.2)	< 0.001
Target lesion: TLR	39 (5.0)	37 (8.7)	2 (0.5)	< 0.001	28 (5.6)	26 (10.4)	2 (0.8)	< 0.001
Target vessel: TVR	51 (6.5)	49 (11.5)	2 (0.5)	< 0.001	35 (7.0)	33 (13.3)	2 (0.8)	< 0.001
Non-target lesion target vessel: NTLVR	51 (6.5)	49 (11.5)	2 (0.5)	< 0.001	35 (7.0)	33 (13.3)	2 (0.8)	< 0.001
Non-Target vessel: NTVR	29 (3.7)	26 (6.1)	3 (0.8)	< 0.001	21 (4.2)	18 (7.2)	3 (1.2)	0.001
Stent thrombosis	3 (0.3)	3 (0.7)	0 (0.0)	0.256	2 (0.4)	2 (0.8)	0 (0.0)	0.499
Late	3 (0.3)	3 (0.7)	0 (0.0)		2 (0.4)	2 (0.8)	0 (0.0)	
Total MACE	76 (9.8)	71 (16.7)	5 (1.4)	< 0.001	54 (10.8)	49 (19.7)	5 (2.0)	< 0.001
TLR MACE	39 (5.0)	37 (8.7)	2 (0.5)	< 0.001	28 (5.6)	26 (10.4)	2 (0.8)	< 0.001
TVR MACE	55 (7.1)	51 (12.0)	4 (1.1)	< 0.001	38 (7.6)	34 (13.7)	4 (1.6)	< 0.001

Two-year Clinical Outcomes

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CA G (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
Total death	13 (1.6)	4 (0.9)	9 (2.5)	0.078	6 (1.2)	2 (0.8)	4 (1.6)	0.686
Cardiac death	5 (0.6)	1 (0.2)	4 (1.1)	0.181	3 (0.6)	1 (0.4)	2 (0.8)	ns
Myocardial infarction: MI	16 (2.0)	8 (1.8)	8 (2.2)	0.690	9 (1.8)	3 (1.2)	6 (2.4)	0.504
ST segment elevation MI	5 (0.6)	2 (0.4)	3 (0.8)	0.662	2 (0.4)	0 (0.0)	2 (0.8)	0.499
Revascularizations	86 (11.1)	74 (17.4)	12 (3.4)	< 0.001	60 (12.0)	50 (20.1)	10 (4.0)	< 0.001
Target lesion: TLR	52 (6.7)	41 (9.6)	11 (3.1)	< 0.001	35 (7.0)	26 (10.4)	9 (3.6)	0.003
Target vessel: TVR	63 (8.1)	52 (12.2)	11 (3.1)	< 0.001	42 (8.4)	33 (13.3)	9 (3.6)	< 0.001
Non-target lesion target vessel: NTLVR	63 (8.1)	52 (12.2)	11 (3.1)	< 0.001	42 (8.4)	33 (13.3)	9 (3.6)	< 0.001
Non-Target vessel: NTVR	32 (4.1)	29 (6.8)	3 (0.8)	< 0.001	24 (4.8)	21 (8.4)	3 (1.2)	< 0.001
Stent thrombosis	9 (1.1)	5 (1.1)	4 (1.1)	ns	6 (1.2)	2 (0.8)	4 (1.6)	0.686
Late	3 (0.3)	3 (0.7)	0 (0.0)		2 (0.4)	2 (0.8)	0 (0.0)	
Very late	6 (0.7)	2 (0.4)	4 (1.1)		4 (0.8)	0 (0.0)	4 (1.6)	
Total MACE	98 (12.6)	77 (18.1)	21 (6.0)	< 0.001	65 (13.1)	51 (20.5)	14 (5.6)	< 0.001
TLR MACE	56 (7.2)	41 (9.6)	15 (4.2)	0.004	37 (7.4)	26 (10.4)	11 (4.4)	0.010
TVR MACE	77 (9.9)	57 (13.4)	20 (5.7)	< 0.001	48 (9.6)	35 (14.1)	13 (5.2)	0.001

Three-year Clinical Outcomes

Variable, N (%)	Entire Patients				Propensity Score-Matched Patients			
	Total (n=774)	Routine CAG (n=425)	Control (n=349)	p Value	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value
Total death	20 (2.5)	7 (1.6)	13 (3.7)	0.070	10 (2.0)	4 (1.6)	6 (2.4)	0.523
Cardiac death	9 (1.1)	3 (0.7)	6 (1.7)	0.313	5 (1.0)	2 (0.8)	3 (1.2)	ns
Myocardial infarction: MI	22 (2.8)	10 (2.3)	12 (3.4)	0.366	12 (2.4)	4 (1.6)	8 (3.2)	0.242
ST segment elevation MI	9 (1.1)	4 (0.9)	5 (1.4)	0.738	4 (0.8)	1 (0.4)	3 (1.2)	0.623
Revascularizations	97 (12.5)	80 (18.8)	17 (4.8)	< 0.001	67 (13.5)	53 (21.3)	14 (5.6)	< 0.001
Target lesion: TLR	59 (7.6)	44 (10.3)	15 (4.2)	0.002	39 (7.8)	27 (10.8)	12 (4.8)	0.012
Target vessel: TVR	72 (9.3)	57 (13.4)	15 (4.2)	< 0.001	48 (9.6)	36 (14.5)	12 (4.8)	< 0.001
Non-target lesion target vessel: NTLVR	72 (9.3)	57 (13.4)	15 (4.2)	< 0.001	48 (9.6)	36 (14.5)	12 (4.8)	< 0.001
Non-Target vessel: NTVR	33 (4.2)	29 (6.8)	4 (1.1)	< 0.001	25 (5.0)	21 (8.4)	4 (1.6)	< 0.001
Stent thrombosis	10 (1.2)	6 (1.4)	4 (1.1)	ns	6 (1.2)	2 (0.8)	4 (1.6)	0.686
Late	3 (0.3)	3 (0.7)	0 (0.0)		2 (0.4)	2 (0.8)	0 (0.0)	
Very late	7 (0.9)	3 (0.7)	4 (1.1)		4 (0.8)	0 (0.0)	4 (1.6)	
Total MACE	117 (15.1)	86 (20.2)	31 (8.8)	< 0.001	76 (15.3)	56 (22.5)	20 (8.0)	< 0.001
TLR MACE	69 (8.9)	47 (11.0)	22 (6.3)	0.021	44 (8.8)	29 (11.6)	15 (6.0)	0.027
TVR MACE	94 (12.1)	65 (15.2)	29 (8.3)	0.003	58 (11.6)	40 (16.1)	18 (7.2)	0.002

Hazard Ratio for Three-year Clinical Events

Variable, N (%)	Total (n=496)	Routine CAG (n=248)	Control (n=248)	p Value	Hazard ratio (95% C.I.)	p Value
Three-years Clinical Outcomes						
Total death	10 (2.0)	4 (1.6)	6 (2.4)	0.523	0.16 (0.02-1.19)	0.075
Cardiac death	5 (1.0)	2 (0.8)	3 (1.2)	ns	0.47 (0.01-13.5)	0.660
Myocardial infarction: MI	12 (2.4)	4 (1.6)	8 (3.2)	0.242	0.25 (0.05-1.26)	0.094
ST segment elevation MI	4 (0.8)	1 (0.4)	3 (1.2)	0.623	5.31 (0-)	0.988
Revascularizations	67 (13.5)	53 (21.3)	14 (5.6)	< 0.001	4.68 (2.46-8.90)	< 0.001
Target lesion: TLR	39 (7.8)	27 (10.8)	12 (4.8)	0.012	2.20 (1.05-4.63)	0.036
Target vessel: TVR	48 (9.6)	36 (14.5)	12 (4.8)	< 0.001	3.23 (1.58-6.63)	0.001
Non-target lesion target vessel: NTLVR	48 (9.6)	36 (14.5)	12 (4.8)	< 0.001	3.23 (1.58-6.63)	0.001
Non-Target vessel: NTVR	25 (5.0)	21 (8.4)	4 (1.6)	< 0.001	6.51 (2.12-19.9)	0.001
Stent thrombosis	6 (1.2)	2 (0.8)	4 (1.6)	0.686	0.24 (0.02-2.28)	0.216
Total MACE	76 (15.3)	56 (22.5)	20 (8.0)	< 0.001	3.29 (1.86-5.84)	< 0.001
TLR MACE	44 (8.8)	29 (11.6)	15 (6.0)	0.027	1.91 (0.95-3.82)	0.067
TVR MACE	58 (11.6)	40 (16.1)	18 (7.2)	0.002	2.26 (1.20-4.25)	0.011

Results (1)

1. After PSM analysis, 2 propensity-matched groups (248 pairs, $n = 496$, C-statistic=0.739) were generated and the baseline characteristics of the two groups were balanced.
2. At 3 years, the incidence of repeat revascularization and major adverse cardiac events (MACEs) were higher in the Routine CAG group than the control group (Table).

Conclusion

Despite the expected beneficial effects, routine FU CAG following index PCI with DESs in AMI pts was associated with higher incidence of repeat PCI and MACE up to 3 years.

Thank you for your attention

